Protected Area Co-Management Where People and Poverty Intersect:

LESSONS FROM NISHORGO IN BANGLADESH

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2012

Dedication

This book is dedicated to those men and women of Bangladesh that have struggled to conserve their own forests, pitted against power and poverty, and to one man in particular who gave his life for that cause. Md. Rafiqul Alam was murdered on March 23, 2008 while trying to protect his forest at the Teknaf Wildlife Sanctuary. He and other men and women throughout the country have faced enormous hardship in reaching for the opportunity to benefit from forest conservation.

The book is also dedicated to the children of Bangladesh: the "future generations" highlighted in the slogan used by Nishorgo. For them, the forest Protected Areas are and can be places of discovery and learning, in the spirit of Tagore's Shantiniketan, and they are just as much places for unabashed joy and laughter, as the poet T.S. Eliot writes:

Sudden in a shaft of sunlight
Even while the dust moves
There rises the hidden laughter
Of children in the foliage
Quick now, here, now, always—
Ridiculous the waste sad time
Stretching before and after.

Acknowledgements

This book attempts to draw lessons from five years of efforts to develop models for forest conservation that benefit citizens neighboring those forests, and benefit the country with lasting places of refuge for wild nature. Nishorgo could never have been undertaken without the dedicated efforts of some individuals and institutions worthy of particular mention. While some of those mentioned below did not contribute directly to this book, their work in support of forest co-management made this attempt to capture Nishorgo's early lessons learned worth the effort, and for this reason we would like to include them in these Acknowledgements.

We note in particular the Nishorgo Co-Management Committees and Councils, whose experiments in governance provided the source for learning, and whose generous hospitality and experiences were critical to success. We should also thank the many organizations associated with the Nishorgo sites: Nishorgo Clubs, Forest User Groups, Community Patrol Groups, and the leaders of community groups whose contributions have allowed us to learn from this effort. In this respect, we would be negligent if we failed to acknowledge in particular the time generously given by the *"Mantri"* at Lawachara, Gidision Suchiang Pradhan. Probably no other leader at any Nishorgo site received more unannounced visits than he did, and he graciously received all of them.

Senior Government officials in the Ministry of Environment and Forests, and within USAID, showed a commitment to this endeavor that far exceeded their normal and routine obligations, and reflected a commitment to public service that remains a model for what government can be.

From the beginning, Nishorgo was rooted in partnerships between public and private entities, and a number of institutions exemplified what such partnerships can offer to public conservation goals. Bay Developments' Iftekhar (Pintu) Khan worked from the project's earliest stages to attract corporate attention to Nishorgo, and similar efforts by the Radisson Hotel proved critical to sustaining that support. The Institute of Architects of Bangladesh offered their expertise to ensure that architectural standards for visitor center construction would meet global standards and yet fit the particular needs of the forest's Protected Areas. The Scouts of Bangladesh, from the most senior leaders to many of the youngest Scouts, gave generously of their time and effort purely out of love of nature and a commitment to the cause of conservation.

The wildlife enthusiast community in general, and the birding community in particular, hold a special place in the development of Nishorgo. Within the first month of Nishorgo's start-up, the renowned birder Enam ul Haque offered a vision of what a love and knowledge of birds can offer to a conservation program, not least as a window into the culture of forest communities. Dentist Ronald Halder made himself available repeatedly for advice and frank observations about Nishorgo. Professor Md. Monirul H. Khan of Jahanginagar University frequently brought his students into Nishorgo forests to learn about the association between healthy bird populations and healthy forests. And Professor Md. Anwarul Islam worked to develop a brilliant young group of students while giving of his own time for research and policy support, including extensive efforts to improve the Wildlife Act.

Amongst all these wildlife enthusiasts, the efforts of Sirajul Hossain must be noted in particular. He has freely given his time to travel throughout Nishorgo sites, and produced an extraordinary photographic essay based on those visits. In addition, he has repeatedly offered the use of his wildlife photographs to many Nishorgo publications and publicity efforts – including this book, always doing so without complaint about the urgency of the requests and never asking for payment.

A number of conservation organizations, most notably the Wildlife Trust of Bangladesh, have also repeatedly given of their time and energy to support conservation causes. The Trust's Enayetullah Khan offered his own time and resources – and the gracious use of his home – in order to bring together those devoted to conservation. The Arannayk Foundation for Tropical Forest Conservation has been a particularly steady partner to the Nishorgo cause, as has IUCN-Bangladesh.

Nishorgo would not have worked, and will not work in the future, without partnerships with leading universities. Professors and staff at Jahangirnagar University, North-South University, the Independent University of Bangladesh, and Dhaka University in particular deserve special thanks. Like these places of higher learning, the Forest Academy in Chittagong also contributed to the development of human capacity throughout recent years, not least in making its facilities available for numerous training programs, and often on short notice.

Finally, we must note the extraordinary efforts of a number of individuals without whom this book would simply have never seen the light of day. From the earliest days of Nishorgo, Bob Winterbottom of IRG has tirelessly provided critical conceptual and technical guidance. Sumaiya Firoze has served as assistant editor and coordinator of the book since its inception. Mohammad Inamul Shahriar offered the creative graphical layout of the front and back covers and provided the final layout for all the chapters. Zaid Ahmed has also worked many hours on chapter layout. Editorial review by IRG's Laurie Chamberlain has provided a critical set of additional eyes to refine the book. Reema Islam stepped in to coordinate final edits and corrections. And Reed Merrill, as head of the follow-on USAID co-management project, has made it a priority to learn from the past by providing resources to see that this book could be completed.

Finally, to all those individuals whose contributions have improved this book, and the Nishorgo effort as a whole, and whose names we have omitted, we recognize that those omissions are purely due to our own oversight. We thank you.

The Editors

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Acronyms and Glossary

ACF	Assistant Conservator of Forests
ADB	Asian Development Bank
Adivasi	Indigenous (literally "first people")
ADP	Annual Development Plan (term used in annual planning both in government and in CMOs)
AIG	Alternative Income Generation
Albizia	Widely planted fast growing trees of the genus *Albizia*
ASA	Association for Social Advancement – a Bangladeshi NGO
Bari	Naturally regenerated saplings used as carrying tools (as sticks) for sungrass
Bazar	Permanent local market
Bbc	Bangladesh bird club
BBS	Bangladesh Bureau of Statistics
BCSIR	Bangladesh Center for Scientific and Industrial Research - an organization generally recognized to have invented the first improved cooking stove in Bangladesh
Beel	A floodplain depression that usually holds water throughout the year, most are connected to other waterbodies and rivers in the wet season
BELA	Bangladesh Environmental Lawyers Association
BFRI	Bangladesh Forest Research Institute
BRAC	A Bangladeshi NGO originally named Bangladesh Rural Advancement Committee
BTM	Bangladesh Transverse Mercator
CARITAS	A Bangladeshi NGO, part of an international network of charitable NGOs linked to the Catholic church
CCA	Community Conserved Area, defined by IUCN as a territory where global biodiversity survives under the ownership, control, or management of indigenous peoples and local (including mobile) communities. The primary characteristics of these sites are: (1) predominant or exclusive control and management by communities, and (2) commitment to conservation of biodiversity, and/or its achievement through various means.
CCBA	Community, Conservation and Biodiversity Alliance
CCF	Chief Conservator of Forests – Head of the Forest Department
CD	Compact Disc
CDM	Clean Development Mechanism
CEGIS	Center for Environmental and Geographic Information Services (formerly known as Environment and GIS Support Project for Water Sector Planning (EGIS). A semi-independent organization linked with Government of Bangladesh, which traces its origins to a project supported by USAID
CEO	Chief Executive Officer
CF	Conservator of Forests
Chara	Flowing stream in hilly areas

Charland	Land comprising of silt and sand deposited in the braided channels f the main rivers or in the coastal delta
Chukrasi	Scientific name: *Chukrasia tabularis* a slow growing native forest tree
CIFOR	Center for International Forestry Research – an international research center headquartered in Indonesia
CITES	Convention on International Trade in Endangered Species
CMC	Co-Management Committee or Co-Management Council, constituent bodies that are collectively termed CMOs,
CMO	Co-Management Organization. A generic term that here describes the full governing structure of two types of CMC formed under the Government Gazette Notification that legally provides the basis for the establishment of the co-management model in five PAs.
CNRS	Center for Natural Resources Studies – a Bangladeshi NGO that focuses on wetland management and conservation
CODEC	Community Development Centre – a Bangladeshi NGO that focuses on improving the lives of coastal communities
CO_2	Carbon Dioxide
CONIC	Community Owned Nature Interpretation Center
COP	Chief of Party – Head of any USAID Project being implemented through a contract
COTR	Contracting Officer's Technical Representative – USAID designated program manager
CPG	Community Patrol Group are group of local community members who work with forest guards to protect their designated area of a Protected Area from illicit felling and other illegal activities.
CSR	Corporate Social Responsibility
CWBMP	Coastal and Wetland Biodiversity and Management Project, a project funded through UNDP GEF that from 2003 to 2010 established participatory collaborative management regimes and supporting management interventions in four ECAs.
Dalal	Collaborator – often middlemen who handle negotiations
Dhaincha	Scientific name: *Sesbania bispinosa* - a fast growing woody plant that can be raised around homesteads, for use in stoves.
DFO	Divisional Forest Officer
DGPS	Differential Global Positioning System
DLRS	Directorate of Land Records and Surveys
DNA	Designated National Authority
DoE	Department of the Environment
DPP	Development Project Proforma - Detailed project design documents that follow on from a PCP, and are approved by the relevant minister and by the ECNEC, chaired by the Prime Minister. The DPP provides the most detailed blueprint for what a given project will undertake
ECA	Ecologically Critical Area
ECNEC	Executive Committee of the National Economic Council - the, Government body that ultimately approves projects of the People's Republic of Bangladesh
EIA	Environmental Impact Assessment
FAO	UN Food and Agriculture Organization

FD	Forest Department
FEJB	Federation of Environmental Journalists of Bangladesh
FGD	Focus Group Discussion
FRMP	Forest Resources Management Project of FD that was funded by World Bank
FRUG	Forest Resource User Group
FSMP	Forestry Sector Master Plan - prepared in 1994
FSP	Forestry Sector Project of FD that was funded by Asian Development Bank
FUG	Forest User Group
Gaddar	People who betray trust
Garjan	Trees of the genus *Dipterocarpus* usually found in wetter forests of eastern Bangladesh
GDP	Gross Domestic Product
GEF	Global Environmental Facility – in this case managed by UNDP
GIS	Geographic Information System
GIZ	German international co-operation (Deutsche Gesellschaft für Internationale Zusammenarbeit)
GNP	Gross National Product
GO	Government Order – an order prepared at the ministerial or departmental level, signed by the relevant Minister, and published in the Government Gazette
GPS	Global Positioning System
GR	Game Reserve. The Government of Bangladesh defines it as an area designated for the protection of wildlife and increase in the population of important species wherein capturing of wild animals shall be unlawful. The status of Teknaf GR, the only GR in Bangladesh, was recently changed to a Wildlife Sanctuary on March 30th, 2010
Gram Sorkar	Village local government or traditional non-government body of elected local community members to make judgements on community issues
Gram Panchayat	Non-government judicial system of a village through a body usually comprising of local elites to solve local issues or develop the community
GRC	Grants Review Committee
Haor	An extensive seasonally flooded saucer-shaped depression in northeastern Bangladesh, typically each includes several deeper *beels* holding permanent water
HIES	Household Income and Expenditure Surveys
ICRAF	Former acronym of the World Agroforestry Center with its headquarters in Kenya
IPCC	Inter-Governmental Panel on Climate Change
IUCN	Known as International Union for Conservation of Nature and Natural Resources since 1956 (formerly known as International Union for the Protection of Nature, IUPN when founded in 1948). World Conservation Union was also used in conjunction with the name IUCN but from March 2008 was no longer commonly used.
IRG	International Resources Group – a US consulting company
Jalmohal	A public (state owned) waterbody where traditionally fishing rights have been leased out, usually they hold water year round and are either *beels* or rivers
Jatiya Sangsad	Bangladesh parliament

Jatra	Theater/drama or folk song show
Khas	Public land
Khasia	The Khasia are an indigenous or tribal people, the majority of whom live in the State of Meghalaya in northeast India, with small populations in neighboring Assam, and in parts of Bangladesh.
LDF	Landscape Development Fund – grants to CMOs to implement broad-based community initiatives as incentives for biodiversity conservation and economic growth
Ltd	Limited
Haat	Local periodic village market, usually held once a week
MACH	Management of Aquatic ecosystems through Community Husbandry project supported by USAID during 1998 to 2007
Madrasa	Islamic religious school
Mahout	Elephant operator
Mandi	Indigenous or tribal people also known as Garo, the majority of whom live in the State of Meghalaya in northeast India, with also a population on northern Bangladesh particularly around Modhupur NP
Mantri	village chief/leader of indigenous communities
MFI	Micro-Finance Institution
MoEF	Ministry of Environment and Forests
Monipuri	An ethnic minority, the majority of whom live in the State of Monipur in India, but with small populations in northeast Bangladesh.
MOU	Memorandum of Understanding
Mouza	Revenue village with a defined boundary recorded in cadastral surveys
MP	Member of Parliament
NACOM	A Bangladeshi NGO known as Nature Conservation Management since 1998 (formerly known as Nature Conservation Movement when founded in 1987)
NBSAP	National Biodiversity Strategy and Action Plan
NEMAP	National Environmental Management Action Plan
NGO	Non-Governmental Organization
NP	National Park, defined in Bangladesh as an area with outstanding scenic and natural beauty with the primary objective of protection and preservation of scenery
NSP	Nishorgo Support Project
NWRD	National Water Resource Database
Panchayat	Non government judicial system of a village through an elected body usually local élites to solve local issues or develop community
PA	Protected Area
Para	Neighborhood
Parishad	A Council (Union Parishads are the grass-roots level of elected local government in Bangladesh, comprising of an elected council representing on average about ten villages.
PBSA	Participatory Benefits Sharing Agreement is a procedure under the Social Forestry Rules that formalizes the prescribed rights of selected beneficiaries to benefit from a (usually) one hectare plot over a period of 10 years.

PCBSA	Participatory Conservation Benefits Sharing Agreement - a proposal modeled after the approved social forestry benefit allocation procedures that was being formalized in the Social Forestry Rules, but included additional requirements intended to strengthen the link between receipt of the PCBSA and engagement in conservation work
PCP	Project Concept Paper - a brief concept paper outlining a proposed projct prepared by government departments and ministries
PD	Project Director – the government officer responsible for a project, in the case of NSP from the Forest Department
PDD	Project Development Document
Pot gaan	Local combination of song and message
PSL	Prokaushali Sangsad Ltd
PURE	Promotion of the Use of Renewable Energies project funded by GIZ
PWD	Public Works Department under Government of Bangladesh
RO	Range officer under Forest Department
Rakhaine	A Buddhist ethnic minority often involved in fishing and living along the south-east coast of Bangladesh and the Arakhan coast of Myanmar.
RDRS	Rangpur Dinajpur Rural Services – a Bangladeshi NGO
RIMS	Resource Information Management System Unit within the Forest Department
RMO	Resource Management Organization – a community based body for wetland management developed by USAID MACH project and registered with the Social Welfare Department
Rohinga	A Muslim ethnic group originating in the Northern Arakan State of Western Burma (also known as Myanmar). Many have fled from Myanmar and live as refugees in Bangladesh
Rohinga camps	Camps of refugees of Rohingan origin displaced from nearby Myanmar and established in the early 1990s
RPA	Reimbursable Project Aid
RUG	Resource User Group (groups formed by the MACH project among poor wetland users to diversify and enhance livelihoods)
RS	Remote Sensing
Samaj	Bangla word for society
Sal	Scientific name: Shorea robusta. Main tree species in the deciduous forst sof central Bangladesh
SBCP	Sundarbans Biodiversity Conservation Project
Sissoo	Scientific name: *Dalbergia sissoo*, a faster growing tree that is now naturalized over much of Bangladesh
SOAR	Stakeholders, Output, Activities, Resources – a planning tool used by field teams to focus their planning on the fundamental steps of identifying critical stakeholder groups, fixing expected changes for the next year (outputs), identifying necessary activities, and determining the resources required
SRI	Soil Research Institute
Sundri	Scientific name: Heritiera fomes. Main tree species of the Sundarban, the largest mangrove forest in the world.

Sunkhola	Also known as sungrass. These are patches of grasslands that grow profusely as a result of repeated burning of hills. Found in almost all the PAs where forest has been lost. Local people harvest sungrass before the onset of the monsoon, mostly for use as thatching material.
TA	Technical Assistance
Tana jal	A type of seine net used in fishing
Teak	Scientific Name: *Tectona grandis*. A high value tree native to Burma and added in plantations in some PAs
Telsur	Scientific name: *Hopea odorata*
TERI	The Energy Research Institute
TFF	Tree Farming Fund - a revolving fund where 10% of the forest benefits are deposited for replanting in areas under Social Forestry, developed by the Forestry Sector Project
Tripura	Indigenous or tribal people representing the Deb Barma people in Bangladesh. Most live in the State of Tripura in India. They are part of the Tibeto-Burmese ethnic group. Originally migrated from the upper Yangtze Kiang and Hwang Ho rivers in Western China.
UNDP	United Nations Development Programme
UNO	Upazila Nirbahi Officer – the senior administrative officer in a sub-district (Upazila)
UNOCAL	Union Oil Company of California is a defunct company that was a major petroleum explorer and marketer from late 19th century to early 21st century, and was active in oil and gas exploration in Bangladesh. On August 10, 2005, Unocal merged with Chevron Corporation and became a wholly owned subsidiary.
UP	Union Parishad – a local council, the lowest level of elected representative government in Bangladesh.
Upazila	Sub-district of Bangladesh
USAID	U.S. Agency for International Development
UTM	Universal Transverse Mercator
VDC	Village Development Committee - a locally elected body in Nepal since 1962
WS	Wildlife Sanctuary. The Government of Bangladesh defines it as an area closed to hunting, shooting or trapping of wild animals and undisturbed breeding ground primarily for the protection of wildlife inclusive of all natural resources such as vegetation soil and water.
WTB	Wildlife Trust of Bangladesh
WWF	Worldwide Fund for Nature
Zila	District of Bangladesh

Introduction and Context for Forest Co-Management in Bangladesh

Lawachara National Park
[Nishorgo Support Project]

1
Introduction

Philip J. DeCosse, Azharul Mazumder, Ram A. Sharma, Ishtiaq U. Ahmad, and Paul M. Thompson

Tagore's life and writings express a vision of humankind as an integral part of nature. For Tagore, humanity is not dwarfed by the awesome scope of the natural world, as in the writings of the Romantics or the epic nature paintings of the American Hudson River school. For him, humans are inextricably a part of nature. The rivers of Bengal cannot be separated from the fishers who work them. The wetlands and rice fields are one with the men and women who live from them. Nature inspires our art, language, and even – as Tagore attempted at Shantiniketan – our pursuit of science.

Tagore's vision of nature, and humankind as part of it, provides a helpful perspective for understanding the conservation challenge in Bangladesh, and the language used to talk about it. Although there are those in Bangladesh who dream of natural areas set aside in perpetuity for conservation as "wild nature" – in which people would not be allowed – most conservationists recognize that this vision could not apply to Bangladesh. It is inconceivable, to those who know Bangladesh's forests well, to think of them without humanity as a central feature, as much a part of the forests as any other form of life. This is certainly true for the rural communities – many of them minority communities – that have lived in or near the forests for hundreds of years. But it is also true for the full range of people who draw life – in one form or another – from these areas. Poor women from neighboring towns comb the forests to collect or cut twigs, stalks of bamboo, or saplings. Urban tourists visit forests as a place of respite from their daily routine. And the forest is criss-crossed by the many footpaths of those who live in its shadows.

Harmonizing people with conserved natural areas in Bangladesh – the central challenge of conservation – needs to start with the fundamental vision of Tagore: that humanity and nature are woven in a common fabric.

In Bangladesh, the fabric of nature is as rich and diverse as the finest silk weavings. Despite being marked by the one of the highest population densities in the world, Bangladesh remains a land of high biological diversity, a product of location and the richness of its extensive wetlands and remaining forests. In this small country, ornithologists have recorded 650 bird species, 176 of which are regular migrants and a further 143 are rare visitors or vagrants (Siddiqui et al. 2008). The Sundarbans, the world's largest contiguous mangrove forest, is home to one of the largest remaining Tiger populations, and buffers people living inland from the stormy waters of the Bay of Bengal. The Ganges and Brahmaputra Rivers flow through Bangladesh and provide a home for the Ganges River Dolphin and, where they flow into the Bay of Bengal, for the threatened Irrawaddy Dolphin and the Estuarine Crocodile. The hill forests of the east are home to the only ape of South Asia, the Hoolock Gibbon.

In spite of its biodiversity, conservation efforts in Bangladesh take place largely outside the framework of the predominant approaches and attention of the global conservation community. International conservation meetings highlight the importance of recognizing the

role of local communities in Protected Area (PA) use and management. In Bangladesh, there is no choice but to engage with such local communities, because they are already combing through the forest every day. Global conservation meetings tend to focus on dialogue between communities neighboring conservation areas, where those communities tend to be small, rural, and homogenous. In Bangladesh, the many communities living around conservation areas tend to be highly complex, both rural and semi-urban, ethnically diverse, highly stratified in income and power, and quite often divided by conflict. Most notably, the international meetings tend to focus on countries and regions where large tracts of land remain to conserve. But in Bangladesh, few large areas of high biodiversity value are left outside of the Sundarbans. This is not surprising, given the population density and the ratio of land to people. The amount of PA land per person is 32 times higher in India than in Bangladesh, 75 times higher in Sri Lanka, and 1,168 times higher in Bhutan (WRI: Earthtrends Database).

Bangladesh is, to use the expression coined by Kareiva and Marvier (2003), a biodiversity "coldspot." As a result, the major global conservation organizations have not seen Bangladesh as a place to put their resources. At present, only one international conservation NGO is present in Bangladesh – the World Conservation Union (IUCN).

Kareiva and Marvier (2003) recognize the lack of attention given to many conservation initiatives outside the world's "hotspots"[1] and argue that the global conservation community might benefit from paying more attention to these other conservation challenges rather than focusing exclusively on defined hotspots. These authors note that important lessons can be learned from institutional conservation arrangements outside hotspots. And it is precisely this desire to learn from the experiences of Bangladesh that has led to this book.

Objectives of this Book

This book is grounded in the belief that there are important lessons to be drawn from Bangladesh's conservation experiences. Conservation in Bangladesh takes place at the nexus of high levels of poverty and high population density. If, within coldspots, conservationists are to take on the challenge of conserving natural ecosystems before they are lost to the onslaught of man, then the experiences of conservation in Bangladesh may be useful to help guide future conservation efforts in areas increasingly challenged by poverty, high population density, and increasing economic demands.

But this book is also written for a more practical reason. During a visit to Bangladesh in 2006, conservationists Ashish Kothari from India and Sarath Kotagama from Sri Lanka remarked that few ongoing conservation management efforts are ever described in ways that capture both their successes and failures. The academic journals tend to distill and synthesize

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[1]   Hotspots, or places of priority for biodiversity investment, have been defined by different conservation organizations in different ways. The first to coin the term "hotspots" was Norman Myers (1988), and hotspots have become an organizational focus of the work of Conservation International (Myers *et al* 2000). The World Wide Fund for Nature (WWF) has identified its Global 200 priority ecosystems for conservation and has focused its resources on those areas. Although a small part of Conservation International's Indo-Burma hotspot falls in the Hill Tracts and WWF includes the Sundarbans as part of one priority ecosystem, neither of these two major organizations has invested more than marginal time or effort in Bangladesh.

implications of field work to such an extent that it is difficult to know what actually happened in the field. Or authors draw from field experiences and interpret them in the context of ongoing academic debates which may be useful in their own right but again make it difficult for the reader to know what actually happened in the field – what worked and what didn't.

In organizing and writing this book, the authors have attempted to describe - for each component of one particular conservation effort in Bangladesh – its successes, failures, and lessons learned. We have attempted to describe the assumptions underlying the design of subcomponents or activities under this effort and then the mid-course corrections or adaptations that were pursued during implementation. We invite readers to refer to specific sections and chapters to explore specific themes or subjects of practical relevance. Researchers may find this experience useful when framing questions for future investigation. We hope that practitioners can learn from the mistakes and successes of conservation efforts that have preceded their efforts. The final chapter attempts to draw some possible implications for the global conservation community from what has transpired in Bangladesh.

To ensure that the book accurately reflects the experience and processes involved, the authors have been limited to those directly involved in implementation. Authors come from the Forest Department (FD), USAID, International Resources Group (IRG), and participating Bangladeshi NGO partners and in one case a professor at the Wildlife Institute of India.

The Nishorgo Experiment

The subject of this book is a specific participatory conservation initiative called "Nishorgo." Nishorgo is a Bangla word meaning "serene nature" or "idyllic nature." Conceived in 2002 and launched in 2003, the Nishorgo Support Project was a 5½ year effort focused on improving biodiversity conservation in the Protected Areas of Bangladesh through development of a collaborative management and governance framework and supporting activities.

Total financing for this effort was USD 9.7 million, including components for construction and habitat restoration of USD 2.5 million and "soft" components for creation of economic incentives, capacity building and training, and policy and communications of USD 7.2 million. Nishorgo was jointly financed by the Government of Bangladesh and USAID and implemented by the Bangladesh Forest Department, with technical support from IRG and Bangladeshi partners Community Development Centre Chittagong (CODEC), Rangpur Dinajpur Rural Service (RDRS), Nature Conservation Movement (NACOM), and the World Conservation Union (IUCN).

Orientation Underlying the Nishorgo Approach

The team implementing Nishorgo began with three fundamental beliefs about the nature of the challenge facing them, which can be summarized as follows:

Formal collaboration is a necessity, not an option, but the form and extent of that collaboration is to be determined: Exclusive fortress-style conservation by the Forest Department in Bangladesh had failed by the time Nishorgo was beginning. A form of collaborative management - including both government and non-government stakeholders - would be a

necessity at Protected Areas in general, and certainly at the Nishorgo pilot sites. The team implementing Nishorgo, including Forest Department partners, was not clear at the outset of the experiment about how much formal collaboration would be required in order to succeed, but was nevertheless certain that the model of the Forest Department acting as the only official decision-maker could not succeed.

The greatest threats to forest Protected Areas come not from the neighboring poor, but from powerful socio-political interests: The "default" position for many key policy-makers and conservationists in Bangladesh at the start of Nishorgo was this logic: "There are many thousands of poor that survive from the produce of the Protected Areas. In order to conserve the forest, you need to offer alternative incentives to those neighboring poor that enter the forest." From early on, the Nishorgo team opposed this position – not because it is wrong, but because it is misdirected. It is indeed true that many thousands of poor survive from the forest Protected Areas in Bangladesh, but if the only extraction from the forest was for the immediate needs of the neighboring poor, the conservation challenge would be quite manageable. Although they are small, forests are generally highly productive in Bangladesh and can provide the necessary output to meet the immediate needs of the local poor, either from limited off-take from core forests or from buffer areas. The deeper and greater threat to the forests is not these neighboring poor acting to meet their immediate livelihood needs, but well-organized commercial demands placed on the forests. Through a network of powerful economic and political actors, the forests are stripped of timber and fuel wood at rates that cannot be sustained, for use in brick fields, timber mills, and commercial fuel wood sales in urban areas. Nishorgo would need to address this broader threat to be effective.

The central and primary challenge for Nishorgo has thus been – from its beginning – the need to alter the network of individuals and institutions with power over the Protected Areas. We aimed to diminish the power and control of the commercial and illicit interests that were resulting in rapid destruction of the forests and instead to raise the authority of a new constellation of actors that would replace the old. We would do this by modifying the policy and institutional instruments determining control over the Protected Areas as well as working to build the economic and social status of those newly included stakeholders in the conservation process.

Organization of the Book

This book is organized into five broad sections, each containing several chapters. This first section reviews the context for undertaking co-management under Nishorgo, including the institutional, policy, social, and economic aspects. The focus is in recording and analyzing how the Nishorgo effort was initiated and the context in which it began.

The second section covers the co-management approach and its implications for governance and PA management, and related policy initiatives undertaken by Nishorgo. Considerable attention is paid to the processes of change in power relations at the level of the communities and newly created Co-management Organizations (CMO) in the pilot PAs. Management planning and monitoring are also covered in this section. Special attention is paid to lessons learned from efforts to allow communities to benefit directly from revenue generated by the Protected Areas.

The third section focuses on attempts made to modify economic and livelihood incentives that might stimulate increased support for conservation. After presenting the overall livelihoods strategy adopted by the project, experiences are presented relating to community patrolling, nature tourism, product labelling and value chain development, carbon sink financing, improved energy technologies, and direct investment in community infrastructure.

The fourth section describes a range of supporting activities considered necessary to establish and sustain co-management and to serve the visitors to PAs. Lessons are drawn from Nishorgo's efforts in capacity building, modifying the image and perception of the Forest Department, supporting applied research and knowledge management, improving design of infrastructure, and presenting interpretive information. Nishorgo paid special attention to communication as a means of expanding and securing impact of the PA co-management approach, along with complementary efforts to engage the private sector in the pursuit of public goals. This section closes with a summary of lessons that have been learned in providing capable facilitation to improved governance.

The fifth and final section summarizes the highest priority lessons from Nishorgo, and places them in the context of global conservation challenges.

The Forest Protected Area System in Bangladesh

Throughout this book, the focus is limited to forest Protected Areas, as distinguished from the other Protected Areas found in Bangladesh, including RAMSAR sites, fish sanctuaries, ecologically critical areas (ECA), and community-conserved areas (CCA). Thus, where the term "Protected Area" (PA) is used, it is implied – unless noted otherwise – that it only refers to those forest Protected Areas designated as national parks, game reserves, wildlife sanctuaries, safari parks or eco-parks and under the statute.

The table below shows all the officially designated forest Protected Areas in Bangladesh today. The five PAs in which Nishorgo allocated its effort are highlighted in bold. Although in the closing months of the Nishorgo Project work also began in Modhupur National Park and in the three Sundarbans Wildlife Sanctuaries, this experience is at too early a stage to generate substantial lessons and is not discussed in this book.

Sl. No.	Name of PA	Main Habitat	District in Which Located	Year Established (Extension)[2]	Area (ha)
	National Park				
1	Madhupur	Moist deciduous forest in hillocks	Tangail and Mymensingh	1962 (1982)	8,436
2	Bhawal	Moist deciduous forest in hillocks	Gazipur	1974 (1982)	5,022
3	Himchari	Mixed-evergreen forest in hills	Cox's Bazaar	1980	1,729

Sl. No.	Name of PA	Main Habitat	District in Which Located	Year Established (Extension)[2]	Area (ha)
4	Lawachara	Mixed-evergreen forest in hills	Moulvibazaar	1996	1,250
5	Kaptai	Mixed-evergreen forest in hills	Rangamati	1999	5,464
6	Nijhum Dweep	Mangrove forest on coastal island	Noakhali	2001	16,352
7	Ramsagar	Large lake surrounded by plantation	Dinajpur	2001	27
8	Medha Kachhapia	Dipterocarp forest in hillocks	Cox's Bazaar	2004	395
9	Satchari	Mixed-evergreen forest in hills	Habiganj	2006	242
10	Khadimnagar	Mixed-evergreen forest in hills	Sylhet	2006	679
11	Barajadhala	Mixed-evergreen forest	Chittagong	2010	2,934
Wildlife Sanctuary					
1	Sundarbans East	Mangrove forest in lowland coast	Bagerhat	1960 (1996)	31,226
2	Pablakhali	Mixed-evergreen forest in hills	Rangamati	1962 (1983)	42,087
3	Char Kukri-Mukri	Mangrove forest on coastal island	Bhola	1981	40
4	Chunati	Degraded bamboo and other vegetation in hills	Chittagong and Cox's Bazaar	1986	7,761
5	Sundarbans South	Mangrove forest in lowland coast	Khulna	1996	36,970
6	Sundarbans West	Mangrove forest in lowland coast	Satkhira	1996	71,502
7	Rema-Kalenga	Mixed-evergreen forest in hills	Habiganj	1996	1,795
8	Fashiakhali	Mixed-evergreen forest in hills	Cox's Bazaar	2007	1,302
9	Dudhpukuria-Dhopachari	Mixed-evergreen forest	Chittagong	2010	4,717
10	Sangu	Mixed-evergreen forest	Bandarban	2010	2,618
11	Hazarikhil	Mixed-evergreen forest	Chittagong	2010	1,322

Sl. No.	Name of PA	Main Habitat	District in Which Located	Year Established (Extension)[2]	Area (ha)
	Game Reserve				
1	Teknaf	Mixed-evergreen forest in hills	Cox's Bazaar	1983	11,615
	Eco-Park				
1	Madhutila	Moist deciduous forest in hillocks	Sherpur	1999	100
2	Madhabkunda	Mixed-evergreen forest in hills	Moulvibazaar	2000	253
3	Sitakunda	Mixed-evergreen forest in hills	Chittagong	2000	403
4	Banshkhali	Degraded bamboo and other vegetation in hills	Chittagong	2003	1,200
5	Kuakata	Mangrove forest in lowland coast	Patuakhali	2006	5,661
	Safari Park				
1	Dulahazara	Dipterocarp forest in hillocks	Cox's Bazaar	1997	900
				Total Protected Areas = 264,002 ha	

Background Data on Nishorgo and its Pilot Protected Areas

To help readers follow the course of the project and understand the situation in the pilot PAs when Nishorgo started, a timeline of key events in the project lifespan and brief profiles of the five pilot PAs is annexed to this chapter.

The designation of Teknaf Game Reserve was subsequently changed to Teknaf Wildlife Sanctuary on March 30, 2010.

PA profile: Lawachara National Park

Area: 1,250 ha

PA established 1996

Location: Moulvi Bazar District, northeast Bangladesh

Habitat: semi-evergreen forest on low sandstone hills up to about 50 m altitude

Access: 8 km east of Srimangal town, a road and railway pass through the PA

Female Hoolock Gibbon (Hoolock hoolock). [Sirajul Hossain]

Biodiversity

About a third of the area is comprised of old plantations from the 1920s and 1930s that retain a high diversity of native forest trees and are mixed with small patches of original forest. This is contiguous with production plantations in 1,390 ha of West Bhanugach Reserve Forest. In the 19th century, this was part of much more extensive forests that were cleared for tea estates and cultivation. Lawachara National Park is probably one of the best known PAs in Bangladesh in terms of biodiversity. In addition to an exceptional 249 species of birds recorded within the PA, including such species as Kalij Pheasant (*Lophura leucomelanos*) and Red-headed Trogon (*Harpactes erythrocephalus*), it is notable for spectacular blooms of arboreal orchids in the early wet season, and a rich mammal fauna. Seven primate species occur here, including vulnerable Capped Langur (*Trachypithecus pileatus*), endangered Phayre's Leaf Monkey (*Trachypithecus phayrei*), and the largest population in Bangladesh of the globally endangered Hoolock Gibbon (*Hoolock hoolock*) – although with only 59 individuals in 16 families this flagship species is rare even here.

Local communities

Two forest villages, Lawachara and Magurchara, inhabited by 63 households of the Khasia ethnic minority and established in the 1940s and 1950s, are located inside the PA where they cultivate betel leaves in 130 ha. A further 16 villages are located within 5 km of the PA boundary; many are inhabited by migrants who moved here in the 1950s. A Tipra ethnic minority village abuts the PA to the south. Over 2,200 households (over two-thirds of them considered poor) inhabit these villages, and most make use of the PA to obtain fire wood, timber, fruits, and food, including occasional hunting. They are joined in these uses by many of the workers from six tea estates that border the PA as well as the poor living around Srimangal and Komolganj towns. Timber theft is sometimes organized and linked with over 20 traders and sawmill owners from the adjacent markets.

Past management

Although the FD has for many years protected the old plantations in the center of the PA, as recently as 1987 similar forest was clear-felled and replanted with fast growing exotic trees (Albizia and Eucalyptus) which now cover 187 ha in the southern part of the PA. Since its declaration as a national park the main management focus has been prevention of logging, but theft of trees, particularly high value non-native teak, remained common. Also, from the mid-1990s until 2006, some areas of undergrowth were cleared by the FD to plant bamboo and cane, affecting natural forest regeneration.

Other threats and pressures

A gas well blowout near Magurchara village in 1997 burned some adjacent forest, and in 2006 a gas pipeline was laid through the NP, posing a potential hazard. Further gas exploration may pose a threat, as does the area's increasing popularity with visitors expecting a mass recreation experience and unaware of appropriate behavior in a PA.
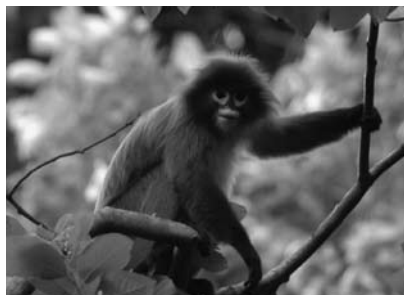
PA profile: Rema Kalenga Wildlife Sanctuary

Area: 1,795 ha

PA established 1981, expanded to present area in 1996

Location: Hobiganj District, northeast Bangladesh

Habitat: semi-evergreen forest on low sandstone hills up to about 50 m altitude

Access: about 40 km southwest of Srimangal town, accessible only along earth tracks through tea estates and forests.

Phayre's Leaf Monkey (Trachypithecus phayrei). [Monirul H. Khan]

Biodiversity

About three quarters of the area comprises natural mixed evergreen forest, although many of the larger trees have been felled over the years. The rest of the area is more open and is mostly cultivated land used by villagers to grow rice, with some plantations and one artificial lake. The area is contiguous with production plantations in Tarap Hills Reserve Forest. This PA used to be part of much more extensive natural forests that were cleared for tea estates and converted to plantations from the 19th century up to the 1980s. It is bordered by tea and rubber plantations to the west, and to the east by the international border. It is relatively understudied as it is difficult to access. Over 100 species of birds have been recorded within the PA, although this list is based on a limited amount of field work; it includes notable species such as Spot-bellied Eagle-Owl (*Bubo nipalensis*). Six primate species occur here, including vulnerable Capped Langur (*Trachypithecus pileatus*), endangered Phayre's Leaf Monkey (*Trachypithecus phayrei*), and vulnerable Bengal Slow Loris (*Nycticebus bengalensis*).

Local communities

One Tipra forest village is located inside the PA, and a further nine forest villages border the PA – in total, 286 households inhabit these villages and 58% belong to ethnic minorities. The forest villages were established up to a century ago; each village has to plant 1,200 saplings per year and is obliged to protect the forest in return for use rights to forest lands that they cultivate. Households from a further 12 villages located within 5 km of the PA boundary make use of the forest resources. The many households from these villages make use of the PA in several ways. Cattle graze in and move through the PA, affecting natural regeneration, and the PA is also used for hunting and collecting bamboo and fire wood. Timber theft is sometimes organized and linked with about 15 sawmill owners and associated timber traders and furniture shops located in nearby markets.

Past management

Although the FD has for many years protected this area, as recently as the 1980s, natural forest along the western side of the PA was clear-felled to be replaced with short duration plantations. In the 1990s a Government of Bangladesh project built a watchtower at the lake, a wide track, and visitor buildings. At this time the practice of clearing undergrowth to make bamboo and cane plantations started within the PA, damaging its biodiversity value.

Other threats and pressures

The forest is somewhat drier than other hill forests in the northeast and some parts are vulnerable to fire. However, the main threat comes from illegal logging, which includes smuggling of valuable teak logs out of the PA.

PA profile: Satchari National Park

Area: 243 ha

PA established 2005

Location: Hobiganj District, northeast Bangladesh

Habitat: mixed evergreen and semi-evergreen forest on low sandstone hills

Access: 130 km northeast of Dhaka, 60 km southwest of Srimangal town, the old Dhaka-Srimangal road borders the PA

Capped Langur (Trachypithecus pileatus). [Sirajul Hossain]

Biodiversity

About half of the area comprises remnant natural forest which retains a high density of fruiting trees but has lost many of the larger trees. The remainder comprises recent plantations, mainly of fast growing trees, with also some teak. This is contiguous with a larger area of production plantations in Raghunandan Hills Reserve Forest to the north. This was once part of much more extensive forests that were cleared for tea estates and cultivation in the 19th century, and to the east and west there are tea estates around the PA. It is one of the better studied PAs in Bangladesh in terms of biodiversity. Considering the small area of this PA, the list of 173 species of birds recorded within it is notable and includes attractive species such as Hooded Pitta (*Pitta sordida*). Among 24 species of mammals, vulnerable Capped Langur (*Trachypithecus pileatus*) and the globally endangered Hoolock Gibbon (Hoolock hoolock) occur here.

Local communities

There is one Tipra forest village located within the PA and inhabited by 24 households which make regular use of forest resources. A further 14 villages are located 6-8 km from the PA boundary. About 2,200 households (about three-quarters of them considered poor) inhabit these villages, and many make use of the PA to obtain firewood, timber, fruits, and food, including occasional hunting. However, they are joined in these uses by many people from the tea estates that border the PA, of whom about a quarter are actually unemployed. Timber theft is sometimes organized and linked with 18 sawmill owners and associated timber traders. Fire wood traders from the adjacent markets organize extraction by poor people.

Past management

From the mid-1990s onwards, some areas of undergrowth have been cleared by the FD to plant cane; this adversely affected natural forest regeneration, and encouraged grazing of cattle within the forest. Since its declaration as a National Park, the main management focus has been protection and prevention of logging, but theft of trees, particularly high value teak, remained common in and around the PA.

Other threats and pressures

There has been extensive extraction of sand from the seasonal river beds found in the PA close to the road. Publicity of this easily accessible and small PA may pose a threat if it attracts large numbers of visitors who are expecting a mass recreation experience and unaware of appropriate behavior in a PA. Visitor management, including provision of suitable recreation areas outside of the natural forest of the PA, therefore, requires careful handling.

PA profile: Chunati Wildlife Sanctuary

Area: 7,764 ha

PA established 1986

Location: Chittagong and Cox's Bazar Districts, southeast Bangladesh

Habitat: secondary growth, scrub, grasses and cultivation on low hills

Access: 70 km south of Chittagong city adjacent to the Cox's Bazar road

Northern Pig-tailed Macaque (Marcaca leonine). [Monirul H. Khan]

Biodiversity

About a quarter of the area is under rice cultivation, and only about 1% is reported to be remnant native forest. The vast majority of the PA comprises secondary growth, scrub, and extensive areas of sun grass, including some areas where plantations of exotic trees were attempted. Until the mid-1980s, when the PA was declared, much of this area still comprised evergreen forests, but there has been extensive logging and encroachment since that time. This accelerated when settlers moved into the area after the 1991 cyclone. It is probably the most degraded PA in Bangladesh in terms of habitat and biodiversity. Wildlife has not been well studied, but recent species lists do not note the presence of key forest species, which is consistent with the loss of forest. Despite the severe loss of biodiversity, Asian Elephants (*Elephas maximus*) still visit the area, where they come into conflict with villagers.

Local communities

About half of the many villages and neighborhoods (*paras*) using the PA are located within the PA. While it is clear that many people live within the PA boundary, the actual number is uncertain with estimates of 15,000 people living within the PA, or of 7,800 households (over 40,000 people) living in or adjacent to the PA and heavily dependent on it. Over 60% of these households are considered to be very poor; most make use of the PA to collect bamboo, fire wood and sun grass, but they also collect fruits and hunt. Many households adjacent to the PA are involved in betel leaf cultivation and this has encroached into the PA. However, rice cultivation is a major use and some households have documents indicating that they were given rights to land in the PA as part of settlement of landless people by the district administration.

Past management

Unrestricted tree cutting has adversely affected the growing stock of trees and scope for regeneration. Shifting cultivation and encroachment for agriculture are practiced on a wide scale and have further depleted the forests. Constrained by political support for the many people who have encroached and settled in the PA, FD management focused on establishing plantations in a reported 28% of the PA. However, most of the plantations have not been established and have been lost to cutting for betel cultivation, firewood, and fires.

Other threats and pressures

In addition to widespread encroachment and cutting of remaining natural vegetation, fires are regularly set by settlers; regenerating trees are cut for use in betel cultivation; livestock are grazed, preventing natural regeneration; and any remaining mammals, including elephants, are hunted. Industrial development is also affecting the PA – there are four brickfields within the PA and five more nearby, all using biomass from the PA for fuel.

PA profile: Teknaf Wildlife Sanctuary

Area: 11,615 ha

PA established 1983

Location: Cox's Bazar District, southeast Bangladesh

Habitat: evergreen and semi-evergreen forest and scrub on low hills between the sea and Naf River

Access: flanked by the Cox's Bazar-Teknaf road, the southern end is close to Teknaf town and the northern end is 48 km from Cox's Bazar

Asian Elephant (Elephas maximus). [Monirul H. Khan]

Biodiversity

Although land cover within the PA has not been inventoried, the area of natural forest and old plantations of native trees – which, together, once covered most of the PA – is thought to have declined by 80%. Most of the PA is now covered in degraded secondary growth, bamboo, scrub, and sun grasses, with extensive encroachment for settlements and cultivation in some areas. Although there had been gradual degradation and encroachment earlier, this accelerated alarmingly from 1991 onwards when there was a massive influx of some 250,000 Rohinga refugees from Myanmar. The Teknaf area as a whole has been well studied in the past and is one of the most bio-diverse areas of Bangladesh. An exceptional 262 species of birds have been recorded from the Teknaf peninsula, including coastal and wetland habitats. The PA still supports the largest population of Asian Elephants (*Elephas maximus*) in Bangladesh, but other large mammals that the PA was established to protect have now been lost, including Sambar (*Rusa unicolor*) and Leopard (*Panthera pardus*).

Local communities

Some 113 villages make use of the PA, of which 52 are located within the PA boundary, where five are inhabited by ethnic minorities, the rest are inhabited by local Bangali people, and an estimated 25,000 Rohinga refugees who have remained in Bangladesh have now intermarried with local people. Almost 20,000 households (about 90% of them considered poor) inhabit these villages, and most make use of the PA to obtain firewood, timber, fruits, and food, including occasional hunting, while some cultivate betel leaves and other crops within the PA. Timber theft is organized and linked with about 20 sawmills located in nearby markets. There are four brickfields within the PA and another four just outside, all of which use large amounts of fuel wood collected from the PA.

Past management

The forest has been subjected to heavy exploitation, shifting cultivation, grazing, and forest fires. Management since 1923 was based on clear-felling of natural forest, followed by planting commercially important tree species such as teak and garjan. In 1963, some blocks of reserved forest were declared as Elephant Reserves to protect elephants. During the War of Independence in 1971, considerable forest areas were encroached and plantations were felled. In the last two decades effective protection proved impossible in the face of the influx of Rohinga refugees.

Other threats and pressures

Land continues to be encroached and settled illegally by a mixture of refugees, local people, and even people from ethnic minorities settled in forest villages since 1920 within the area. Regular burning, extensive livestock grazing and intensive collection of fuel wood prevent natural regeneration. Hunting is also a threat for the remaining mammals in the PA.

Nishorgo in Brief: A Timeline

Jan '03	Bilateral agreement concerning PA co-management signed between Government of Bangladesh and USAID
Jun '03	Technical Team (including IRG and Bangladeshi NGOs CODEC, NACOM, and RDRS) selected
Jul '03	Steering Committee formed by Ministry of Environment and Forests
Aug '03	Elements of *Nishorgo: Vision 2010* proposed by Forest Department
Oct-Nov '03	National student competition organized to propose name for new PA co-management program
Dec '03	Secondary data review studies completed for all five pilot areas
Feb '04	Public inauguration and launch of Nishorgo Program of the Forest Department
Mar '04	Initial draft of the Nishorgo Project Concept Paper (PCP) Completed
Apr-Jul '04	Detailed site appraisals for all five sites completed
May '04	FD team shares experiences of co-management in West Bengal State
Aug '04	"Comprehensive Assessment of Capacity for PA Management by FD and Key Stakeholders" completed
Nov-Dec'04	Site level orientation meetings with key stakeholders completed for all five sites under leadership of the FD
Oct '04	Pre-ECNEC approval obtained for Nishorgo Support Project
Apr '04	Medha Kachopia National Park created
Apr '05	1st cross visit by Co-Management Committee members to West Bengal
Apr '05	ECNEC approval obtained for Nishorgo Support Project
Aug '05	1st Community Patrol Groups form at Lawachara National Park to complement FD patrolling
Aug '05	Government Order issued formally recognizing all Nishorgo pilot site Co-Management Committees and Councils;
Oct '05	Satchuri National Park created
Feb '06	2nd cross visit by Co-Management Committee members to West Bengal
Jun '06	1st Submission to Ministry of Finance of proposal to share of 50% PA entry fees with Co-Management Committees
Jan '07	Government approves Participatory Management Plans for all Nishorgo sites
May '07	1st PA-level Annual Development Planning sessions including Co-Management Committees and Forest Department
Jun '07	Bilateral agreement signed for expansion of co-management approach in forests and wetlands.
Sep-Oct'07	3rd cross visit by Co-Management Committee members to West Bengal State in India
Nov '07	Cyclone SIDR hits Sundarbans, Nishorgo is requested to provide support to Sundarbans Wildlife Sanctuaries
Jun '08	Opening of follow on support project: Integrated Protected Area Co-Management (IPAC) Project
Jul '08	2nd PA-level Annual Development Planning sessions, including Co-Management Committees and Forest Department
Jul '08	1st Visitor Interpretation Center is inaugurated at Mochoni Nature Center of Teknaf Wildlife Sanctuary
Nov '09	New Government Order allowing Co-Management Organizations at all forest Protected Area
Oct '08	Closing of Nishorgo Support Project
Oct '09	Shared entry fee collection at Nishorgo pilot modalities approved

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The Conservation Context in 2003

Philip J. DeCosse, Azharul H. Mazumder and Monoj K. Roy

The purpose of this chapter is to outline the policy, legal, institutional and socio-economic characteristics of the conservation context when Nishorgo began in early 2003. The chapter begins with a brief descriptive summary of the historical context and then turns to the status of forest and biodiversity at the time the project began. Subsequent sections cover the policy and legal, institutional and socio-economic context at the time.

Historical Context

Forest and biodiversity conservation in Bangladesh are rooted in cultural traditions and in pre- and early post-colonial strategies of the Forest Department, which has a long and storied history of forest management. The Charter of Indian Forests was promulgated in 1855 recognizing the importance of reserve forests and proposing an outline for forest conservation for all of India (Negi 1994). Concerns for biodiversity assets in the country date back to colonial times, and were evident in the 1879 Elephant Preservation Act and the 1912 Wild Bird and Animals Protection Act. These regulations were repealed in 1973 when the Government of Bangladesh passed the Wildlife (Preservation) Act, which today is the principle legal framework document for activities concerning forest Protected Areas.

Before partition of the Indian sub-continent in 1947, the forests of what is now Bangladesh were administered under Forest Circles of the Bengal and Assam Forest Departments. From 1947

Forest Department staff bungalows like this one at Teknaf Wildlife Sanctuary were constructed in the 1920s.
[Philip J. DeCosse]

to 1962, the Provincial Forest Department of Pakistan was the authority, and with the formation of Bangladesh in 1971, reserved and proposed reserve forests passed to the Bangladesh Forest Department. Throughout these transitions, the Department's staff maintained high standards of professional forest management, evident today in the few remaining forest management plans and reports from the time which survive at the Forest Department in Bangladesh. Through the colonial period and into the Liberation period, the Forest Department staff, and particularly the Divisional Forest Officers (DFO) maintained unequaled power in the more remote rural areas where forests were still plentiful.

Forest management by the Department has had a mixed impact on conservation of biodiversity in forests. During the colonial era, timber planting and extraction drove forestry operations, with the 1894 Forest Policy shifting focus to revenue earning and framing of formal government rules to that end. Based on the earlier Forest Policy, the 1927 Forest Act was passed, consolidating central government control over declared Reserve Forests and driving an expansion in plantation management activities. The 1955 Forest Policy reiterated the authority of the Department over forest lands, and re-asserted a silvicultural emphasis on maximizing total yield from the forests.

Some scattered efforts were made in the 1960s to recognize a role for conservation, most notably with the declaration of Parks or Sanctuaries at Sundarbans East (1960), Madhupur (1962), and Pablakhali (1962), but the driving priority at this time was "development forestry", with its emphasis on high yielding sylvicultural practices and on the forest's direct economic contribution to government revenue and the economy. Management Plans or Working Plans during this time targeted production, with rare mention of conservation, unlike the plans of earlier decades.

Recognizing the perilous situation of natural forests in the country, the Forest Department began some limited efforts in the 1960s to create forest Protected Areas from Reserve Forest lands. The largest increase in these declared Protected Areas (PAs) took place in the 1980s. By 2002, the PAs included seven National Parks, eight Wildlife Sanctuaries and one Game Reserve. Although these areas were brought under conservation status, few received matching investments in staff capacity, infrastructure, applied research, or conservation management. In effect, the PA network – although established to encourage protection – brought in many places a reverse impact. Without a budget for conservation practices and any training for conservation interventions, forest staff in the PA sites perceived the postings as places with fewer resources for forest management operations or less "real" work to do (as many described it during initial Nishorgo team assessments in 2003). With minimal operational budgets for conservation and protection work and an increasing demand for timber, the PA lands saw the worst of forest pressure and felling by 2003.

Rice cultivation inside Rema Kalenga Wildlife Sanctuary, 2003. Human interaction inside the PAs is a common feature throughout the system. [Philip J. DeCosse]

Forest and Biodiversity Status in 2003

In 2003, 17 percent of the total land mass of the country was designated as forest land. This figure included state forest land of some 2.2 million hectares, itself consisting of 1.3 million hectares of natural forest and plantations under the jurisdiction of the Forest Department (FD), and 0.9 million hectares of un-classed state forest administered by the Ministry of Lands. An estimated 0.4 million hectares of forest were in private hands, notably including the successful homestead plantations common across the floodplain areas of the country and small tracts of natural forest and plantations on estate lands (Roy 2004).

Reliable up-to-date statistics on the changes in tropical forest cover in Bangladesh were hard to come by, but a 2001 report on forestry in Bangladesh concluded that "forest cover has been reduced more than 50 percent since the 1970s" (Chemonics 2001).

For the largest and most important PAs within the network, the situation was indeed dire. The three Wildlife Sanctuaries in the Sundarbans had been subject to steady extraction of mature sundri (Heritiera fomes) and other valuable timber. The Chunati Wildlife Sanctuary had been virtually clear cut after its declaration as a PA in 1988. All the northern PAs with remaining teak stands were coming under increased pressure as the teak volume remaining on Reserve Forest lands dwindled.

Policy and Legal Context

The central and primary laws and policy documents framing interventions in forest Protected Areas include the Wildlife (Preservation) Act 1974, the Forest Act of 1927 and the Social Forestry Rules, the last of which was not yet finally approved at the time of Nishorgo's launch, but was already being put into practice throughout the country in a provisional form.

The Wildlife (Preservation) Act identifies three categories of PAs – National Parks, Wildlife Sanctuaries and Game Reserves – and stipulates rules and restrictions for their management and use. National Parks are identified as areas of "outstanding scenic and natural beauty with the primary objective of protection and preservation of scenery." Hunting, capture, or disturbance of wild animals, firing of guns, burning, cutting or damaging plants or trees, clearing land for any purpose, or polluting water are prohibited. Similar provisions apply also to the Wildlife Sanctuaries and Game Reserves, and the Act allows little scope for formally allowing a collaborative governing structure, or any formal inclusion of neighboring communities in the decision-making process for Protected Areas.

Just behind the Shilkali Garjan forest on west side of Teknaf in April of 2004, this Beat Officer observes the hillsides that have been prepared for a plot of social forestry. [Philip J. DeCosse]

Most declared Protected Areas have been carved out of existing Reserve Forest land, and continue to have borders with existing Reserve Forests, so the Forest Act 1927, which governs many aspects of Reserve Forest use are directly relevant to biodiversity conservation. Yet, at the time Nishorgo began, the Department was not implementing policies that might have linked Reserve Forest management in the buffer areas of PAs to the PAs themselves. Hence, in one notable case in 2003, FD staff scheduled clear-cut felling of teak in a Reserve Forest adjacent to a natural forest area within the Satchuri National Park, and had to clear a wide road through the Park to allow loggers to get timber out. Since there was not at the time any management or policy framework discouraging or disallowing timber felling immediately adjacent to a PA, this was considered a normal and acceptable practice.

The Forest Act 1927 offers considerable latitude to the Forest Department to determine use of forest lands gazetted as Reserves, and centralizes much of that authority in the person of the Chief Conservator of Forests, while allowing little scope for any formal role for neighboring communities or the broader public. It is this Forest Act 1927 that has drawn the particular ire of community groups and NGOs, particularly those working on behalf of minority communities that lost access to forest lands after promulgation of this Act.

Social forestry rules had been in draft form since 2002 and were being applied under various projects including the World Bank's Forestry Support Project (FSP). The draft rules as well as formalized project guidelines for social forestry set the terms by which local communities would benefit from shared revenue from planted trees on Forest Department land. The design of the FSP, launched in 1997, called for establishment of social forestry plantations on Reserve Forest lands in buffer areas around PAs. The pros and cons of these social forestry plantations had already been widely debated in Bangladesh by the time Nishorgo began, see in particular Khan et al (2004) and Gain (2001).

However flawed, the social forestry process provided a direct avenue for benefit sharing with communities from government forest land. Indeed, in a government financial system where it is widely understood that all revenue must be collected and reported to the central Treasury prior to any field or local disbursements, the FSP had found a way to allow revenue to be retained locally by beneficiaries at the time of harvest and auction. This was a significant and positive improvement to standard government practice in all sectors, and certainly in the forest sector, where all revenue is collected centrally.

The most common formula for benefits sharing in social forestry was the so-called 45-45-10 model, under which 45 percent of harvested revenue would go to the government, 45 percent would go directly to the beneficiary, and 10 percent would be deposited into a revolving Tree Farming Fund (TFF) to allow replanting of the same land. The Social Forestry Rules were gazetted officially in 2004.

The National Forest Policy 1994 included this key target to expand the Protected Area network: "The priority protection areas are the habitats, which encompass representative samples of flora and fauna in the core area of National Parks, Wildlife Sanctuaries and Game Reserves. Attempts will be made to increase the amount of this protected area by 10 per cent of the reserved forestland by the year 2015" (GoB 1994). The Policy stated broadly that:

"Through the participation of the local people, illegal occupation of the forestlands, illegal tree felling and hunting of the wild animals will be prevented."

The legal framework for what were called "Ecologically Critical Areas" (ECAs) provided another important reference point for Nishorgo as it began. The ECAs had been authorized under the Bangladesh Environmental Conservation Act of 1995, which stated that if the Government is concerned that the degradation of an ecosystem has reached "a critical state" or is so threatened, it could declare the area to be an ECA. In April 1999 this authority was exercised for the first time by the Secretary, Ministry of Environment and Forests with the advice of the Director General of the Department of the Environment (DoE) in officially notifying the establishment of seven separate wetland and other areas covering approximately 40,000 ha. The language of the Act allowed the DoE to identify forest areas for designation as ECAs, but it did not do so. However, a 10 km wide buffer immediately adjacent to the entire Sundarbans Reserve Forest was declared as an ECA, so this use in declaring buffer areas, and in most of the ECAs covering a mix of private and public lands offered a potential mechanism for enabling future participatory management initiatives such as Nishorgo.

The broader framework for biodiversity management at the time Nishorgo began was provided by Bangladesh's participation in a number of international conventions. Bangladesh was a signatory to the 1992 Biodiversity Convention elaborated at the Earth Summit in Rio de Janeiro and was a participant in earlier global conservation initiatives before "biodiversity" became the watchword of the day. The country had ratified the 1971 Ramsar Convention on wetlands of international importance and waterfowl habitat, the 1972 Convention concerning the protection of World Cultural and Natural Heritage and the 1973 Convention of International Trade in Endangered Species (CITES).

The theme of biodiversity conservation had also been included in the 1995 National Environmental Management Action Plan and the 1997 draft of the National Conservation Strategy so the ideas both of conservation and community involvement was not foreign to the policy dialogue and framework at the time. In 2002, the Ministry of Environment and Forest with the collaboration of the International Union for the Conservation of Nature (IUCN)-Bangladesh and funding support from United Nations Development Programme, had begun the preparation of a "Biodiversity Conservation Strategy and Action Plan" in accordance with the requirements for signatories to the Convention on Biological Diversity.

Institutional Context

At the time Nishorgo began, conservation or management activities within the five target Protected Areas were extremely limited. The Wildlife Circle that had been created in the late 1970s and then suppressed in the 1980s had been brought back as an administrative unit in 2000. But Wildlife Circle staff members were without operational resources and, more importantly, did not have authority over most of the Protected Areas. In 2003 the only protected areas nominally under the management of the Wildlife Circle were the three Sundarbans sanctuaries and Bhawal National Park. None of the five selected Nishorgo pilot sites were under the management of the Wildlife Circle.

Sign at entrance to Lawachara National Park, 2003. The sign directs visitors to travel some 30 miles to get permission to enter the PA. Guidelines for managing PA visitors were not then widely understood.
[Philip J. DeCosse]

Whether in the Wildlife Circle or territorial Divisions, FD staff members had little training or understanding of protected area management needs, and in most cases were scarcely familiar with the boundaries of the declared Protected Areas. Other than makeshift hand-painted signs at Satchuri and Lawachara, none of the five sites were demarcated and recognized as protected areas to the public. Indeed, the words "Protected Areas" in English were scarcely used except by those that had taken part in IUCN-supported processes (such as the World Parks Congresses), and had no clear and broadly understood Bangla translation either.

Training of Forest Department officers in wildlife or protected area management was limited. The FD under the Global Tiger Forum and the FSP had sent eight Assistant Conservators of Forest (ACF) to the Wildlife Institute of India in Dehradun to complete a ten-month diploma course in wildlife management. In 2002 USAID financed the participation of eight more ACFs in the same wildlife program. This program was the primary exposure of senior staff members in the department to the principles of protected area management, although a number of other senior staff members had received master's degree training in zoology or wildlife management. Training and awareness programs in the management of people and protected areas were largely absent.

The 2001 Chemonics assessment put it this way:

"In the other national parks and wildlife sanctuaries, there is no semblance of protected area management. In many cases, Forest Department staff is unaware of the boundaries, or even the existence of the protected area. The protected area is simply a part of the surrounding reserve forestland.

Forest Department officers sell permits to allow collection of firewood, sun grass, and poles. Fires are allowed to encourage the growth of bamboo. Forest Department staff tolerates grazing of livestock in the wildlife sanctuaries in the same way that it is tolerated in the adjacent forest" (Chemonics 2001).

While the conservation interventions at Protected Areas were indeed limited, a specific biodiversity conservation component had been included in some major multilateral bank funded loan projects being implemented by the Department. Included among these were the World Bank-funded Forest Resources Management Project, the Asian Development Bank-funded Forestry Sector Project and – not long before the start of Nishorgo – the Asian Development Bank-funded Sundarbans Biodiversity Conservation Project.

Under the Forestry Sector Project, conservation management plans were prepared for eight PAs. At the same time, strategies for biodiversity conservation in each of the country's Forest Divisions were developed to guide the efforts of the Forest Department in this new mandate for biodiversity conservation. The technical recommendations at site level and divisional level had yet to be taken up by 2003, however, reflecting a continued focus on revenue-based and production forestry within the Department, and within the broader government.

Seized timber stacked at site of then-proposed Satchuri National Park, 2003. [Philip J. DeCosse]

A project approved in 2002 by UNDP and GEF-- the Coastal and Wetlands Biodiversity Management Project – was to be the first effort to make the ECA concept operational at four ECAs: Cox's Bazar-Teknaf Beach, Sonadia Island, St. Martin's Island and Hakaluki Haor (UNDP 2001). And under the Ministry of Environment and Forest-implemented and UNDP-supported Sustainable Environmental Management Program, a component was implemented to support participatory wetland ecosystems management and biodiversity conservation in wetlands including haor (large wetland depressions), char (accretion of lands in river or bay) and floodplains, and included some restoration of swamp forests.

USAID, for its part, had invested in developing community-led, ecosystem-based approaches for biodiversity management through the Management of Aquatic Ecosystems through Community Husbandry (MACH) project, begun in 1998. This project was assisting local communities, local government bodies and the Ministry of Fisheries and Livestock to undertake participatory management and conservation of vital open water wetland and fisheries resources. MACH operated in three representative freshwater wetland systems: Hail Haor – a large perennial wetland located on the floodplains of Moulavibazar District in the northeast of the country; the seasonally flooded Lower Turag-Bongshi River Basin in Gazipur District just north of Dhaka; and the flash flood-prone Upper Kongshaw-Malijhee River Basin located in Sherpur District near the northern border; in each case the immediate catchments included some part-degraded forest lands. It worked with a range of stakeholders within the local communities but particularly those who rely on the wetland resource base, notably fisherfolk who had been most directly affected by past declines in productivity of the degrading wetlands resource.

A mid-term evaluation of MACH conducted in late 2001 concluded that the project had made significant progress in catalyzing a community-based response to the issues affecting the sustainability of open water resources. The Nishorgo team recognized at startup that it would need to learn from these successes.

A number of other activities were under way in biodiversity management at the time,

including a program financed by the U.S. Fish and Wildlife Service with IUCN-Bangladesh and NACOM, a local conservation NGO, to improve conservation of the Asian Elephant through a survey of the existing elephant populations in the Chunati and Teknaf areas.

Socio-Economic Context

The period from 1999 through to 2003 (when Nishorgo began) was marked by steady growth in the GDP of Bangladesh (5.2% per year on average), with Gross National Income (GNI) also growing steadily during the period, from US$ 780 in 1999 to US$ 980 in 2003. In spite of political instability, this growth has continued and even increased in the period since, with annual GDP growth above 6% in every year since 2003 and GNI reaching US$ 1,340 by 2007 (World Bank no date).

Bangladesh had made significant progress in reducing poverty levels in the two prior decades, but the number of people living in poverty was still very high. According to the World Bank "Poverty Assessment for Bangladesh,"

Betel leaves from Lawachara National Park's Maghurchara Khasia Village are packaged for sale. Rising demand for these and other forest products placed increasing pressure on the PAs. [Philip J. DeCosse]

more than 56 million people were living in poverty in 2005, 35 million of whom were living in extreme poverty (Table 1).

Table 1: Poverty and Extreme Poverty (percent of population)

	1991-1992	1995-1996	2000	2005
Poverty	56.8	50.1	48.9	40.0
Extreme Poverty	41.3	35.1	34.3	25.1

Source: World Bank (2008)

The heart of the rural poverty challenge is the management of natural resources. Seventy percent of Bangladeshis depend on natural resources (wetlands and forests) for their livelihoods and these resources have been modified or diminished in scale (USAID 2003). The rural poor, although mostly landless and near landless, are traditionally the most natural resource dependent living lives totally dependent on natural capital including wild aquatic and forest common resources from public lands and laboring on farm land.

The rate of reductions in poverty between 1991 and 2005 did not occur equally across the country. While poverty declined overall, these improvements have been less rapid in rural areas in general, and poverty in the western areas of the country had declined more slowly than the eastern areas, including the four eastern Districts where the Nishorgo pilots sites are

located (World Bank 2008). The rapid economic growth that had reduced poverty throughout the country had benefited people in urban areas more than rural, with significant wage employment increases in urban areas – much of it due to the garment, telecommunications and banking sectors – and consequent declines in urban poverty levels. Accompanying this steady economic growth has been an increased concentration of wealth, with those benefitting have steadily more disposable income. The top decile of income earners in urban areas accounted for 28 percent of income in 1984 and 41 of income of total income by 2000 (BBS 2003).

As the incomes of urban populations grew, so did their expenditures on tourism and nature tourism. In the mid-1990s, the Parjatan (government-run) hotels were the only tourist facilities at the Cox Bazar beach area, but by 2003 there were no less than 10 multi-story hotels, with five more under construction. The crowds on holidays in Cox Bazar's beach had come to be as severe as those in Dhaka. And visitation to nature areas in other parts of the country also saw a growing demand.

This desire and ability to pay for recreational outings by a growing urban middle and upper class was a trend not missed by the Government. The Government began to invest during this time in a newly created concept of "Eco-Park". Although these Eco-Parks had no legal standing under existing legislation, they were created through necessary Government Orders and then financed with Government-backed investment projects. These Eco-Parks had little to do with ecotourism as defined by the Ecotourism Society[1] or with its application by such leading ecotourism operators as Guide Tours Ltd. They were instead opportunities for mass tourism in a modified natural environment marked by extensive construction interventions such as roads, cafeterias, elevated walkways, zoos and the like.

Typically backed by a strong Member of Parliament or a Minister with forest lands in his constituency, these Eco-Park projects had increased in number rapidly just prior to Nishorgo's beginning, and included projects at Madhobkunda and Mooraichara (US$0.58m), Banshkali (US$ 1m), Dulhazara (US$ 1.5m), Modhupur (US$ 1m), Kaptai (US$ 1.5m) and Sitakunda (US$ 0.5).

And the rate of increase in paying visitors at these sites provided a telling glimpse into the demand for a nature experience from the Bangladeshi population. Even in 2003, the number of paying weekend visitors to the small Dulhazara Safari Park exceeded 20,000, while the small Sitakunda Eco-Park was receiving 15,000 paying visitors

Visitors to the PA are increasing rapidly, while the size of the PA are small. Here, in 2003, advertisements are broadcast to visitors by a car driving through the Lawachara National Park. [Philip J. DeCosse]

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[1]   The International Ecotourism Society defines ecotourism as: "responsible travel to natural areas which conserves the environment and improves the welfare of the local people". See their official website for more detail.

in a single day. Clearly, the demand to escape from the confines of urban areas and visit nature was of great interest. However, in spite of their popularity for middle class visitors, Eco-Parks became highly criticized by early 2004, with objections based on their lack of integration into the local social or environmental context, the poor quality of construction interventions, and their lack of legal basis, among other reasons.

The socio-economic and cultural context at Nishorgo's five pilot sites differed from national and rural averages in a number of specific ways (Hossain 2007). Perhaps the starkest difference is in the religious and ethnic composition of the population at the Nishorgo Protected Areas, where a higher proportion of non-Muslims and non-Bengali peoples reside. Although the proportion of Adivasi (indigenous) population in each of the Districts where Nishorgo sites are found is under 2.5 percent, the average proportion of Adivasi living around Nishorgo sites is 14 percent, with this going up to 32 percent at Rema-Kalenga Wildlife Sanctuary. Although at the national average level, 90 percent of the population is estimated to be Muslim by religion, the average at Nishorgo pilot sites was only 77 percent, with the other religions including Hindu, Buddhist and Christian (Hossain 2007). So, the Nishorgo sites tended to be more ethnically and socially diverse than the national averages.

Education levels at Nishorgo sites are generally higher than national rural averages, with greater literacy at all Nishorgo sites (except Teknaf) than national rural averages. In rural areas across the country, 58 percent of men and 66 percent of women had not completed five years of school. At each of the Nishorgo sites other than Teknaf, educational attainment was better than these national averages. However, the population at Nishorgo sites that had completed more than five years of school is more comparable to the national averages, with those completing over nine years of education virtually the same inside and outside Nishorgo sites (Hossain 2007). These site averages, however, hide inequities in the social structure around pilot Nishorgo PAs, among them being marginalization in education and health access of the Adivasi population.

While education levels are generally better at Nishorgo sites, access to clean and safe drinking water is generally worse, not least because the Nishorgo sites are generally in upland forest areas with more difficult to access water tables. Also, average estimated income levels are lower at all Nishorgo sites compared to rural averages, and evidence indicates that landlessness is generally on the rise at all sites other than Lawachara, which shows a slight drop (Hossain 2007).

Conclusion

The Nishorgo experiment thus began at a time when PAs and associated wildlife conservation on forest lands were under an accelerating threat of degradation from a growing economy and an underinvestment in skills and systems for PA management and protection. Yet, in 2003, important efforts in improving participatory resource management were being implemented in the Forest Department and other government departments. And a growing middle class had started to demonstrate its interest in visiting nature, especially in mass tourism to nature areas. Nishorgo's genesis thus took place in a time of unique threats in terms of poverty, institutional gaps and a rapidly growing economy, but also a time of unique opportunities.

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3
Genesis of the Nishorgo Forest Co-Management Experiment

Azharul H. Mazumder and Paul M. Thompson

The purpose of this chapter is to provide a brief review of the origins of the Nishorgo co-management project, prior to its formulation as a specific project. The conceptual origins are reviewed, as is the process of dialogue between USAID and the Government of Bangladesh.

Co-Management: From Open Waters to Forests

The seeds of USAID support for forest co-management under Nishorgo were planted at the time of the Flood Action Plan process in the early 1990s, a process supported also by USAID. Analyses done in support of that process highlighted the value of capture fisheries that had been neglected in the past, identified shortcomings in the management of open waters, noted that traditional community institutions related to management of open waters had gradually been eroded, and that biodiversity and productivity of freshwater wetlands had declined as wetlands were drained and water flows had been interrupted and redirected by construction of embankments (Ali 1997; Halls 1998; Sultana and Thompson 1997). The most notable feature of fishery and wetland management at that time was the absence of management concern for fisheries and wetlands, the government had divided public wetlands into thousands of waterbodies or "jalmohals" in each of which the fishing rights were leased out by the Ministry of Land to the highest bidder (there being no direct role for the government's specialist agencies for fisheries or environment in this process).

Although community-based fisheries had been tested in several individual waterbodies, including ox-bow lakes, beels and parts of rivers, in the mid-1990s, the larger open water systems presented unique obstacles to applying the same community based approach. The fishers traditionally using open water fisheries in Bangladesh were principally from the minority Hindu community, and were also the poorest members of the broader society in those areas. These poor and minority groups had little capacity to challenge those more powerful sections of society that could afford to lease waterbodies and who were encroaching on open waters for agriculture and aquaculture. Without some sort of formalized recognition and alliance with the public sector, these communities would have little possibility of continuing their open water fisheries practices nor of slowing the loss of wetlands that would exacerbate floods.

One specific open water pilot experiment in Tangail – undertaken and supported by the NGO Center for Natural Resources Studies (CNRS) – was instrumental in testing a new and different way of managing open waters. CNRS was able in that pilot effort to show that natural fishery productivity could recover when silted up channels between floodplain wetlands and main rivers are re-excavated (Rahman *et al.* 1999). In other waterbodies NGOs had also worked to help minority fishers to organize to manage fisheries with support from the Department of Fisheries, but access had only been assured for the fishers for three years (Thompson *et al.* 2003).

USAID's MACH project had demonstrated the viability of wetland co-management before Nishorgo began. [Sirajul Hossain]

Building on these pilots in open water fisheries management, USAID financed from 1998 onwards the Management of Aquatic ecosystems through Community Husbandry (MACH which means fish in Bangla). Implemented by Winrock International working with CNRS, Caritas and Bangladesh Centre for Advanced Studies, in collaboration with the Ministry of Fisheries and Livestock, MACH successfully tested and developed a model for wetland co-management.

While this started with helping local wetland users organize so they could then restore waterbody productivity, on its own this would not be enough in large wetland systems. A variety of options were considered for joining and strengthening fishing communities through alliances with the public sector. Linking user organizations with the Department of Fisheries at Upazila (sub-district) level was not sufficient on its own as wetlands come under the land administration headed at this level by the Upazila Nirbani Officer (UNO), the chief administrative officer, who has a key role in the granting of waterbody leases. By 2002, a tripartite structure had developed for fisheries co-management, and in the later stages of the MACH project attempts were made to have this mainstreamed more widely. Among poor wetland users, mostly fishers, federations of Resource User Groups were established largely to support livelihood diversification. To manage specific wetland areas, including holding leases to waterbodies reserved for them for 10 years, Resource Management Organizations were formalized comprising not only of RUG members but also representatives of user villages (farmers, landless, women and local leaders). To coordinate management over larger wetland systems, balance power, and resolve conflicts Local Government Committees (later formalized as collaborative management bodies named Upazila Fisheries Committees) were formed comprising of sub-district officials, local council (Union Parishad) chairmen, and the presidents of the Resource Management

Organizations and federations of Resource User Groups (see Halder and Thompson 2006; WRI 2008 chapter 3).

With an increased interest in conserving biodiversity while also contributing to livelihood improvements, USAID considered application and adaptation of this fisheries co-management approach to the forest sector. On public forest lands at that time, the Forest Department had been expanding social forestry, a model that gave individuals rights on small parcels of Reserve Forest land to new plantations of exotic tree species. Social forestry was participatory, but in a very narrow sense, and with management of the process entirely in the hands of the Forest Department, with the recipients being selected and directed by the Department.

By 2003, social forestry agreements allowed for participation by the public in forest management, although by individuals interacting directly with the FD. Here, FD staff give payment of social forestry benefits. [Forest Department]

So social forestry, while participatory in this sense, did not provide a parallel to the co-management and collective action that had been introduced in the wetlands. Indeed, the narrow interpretation of the Forest Act 1927 prohibited any community involvement within the Reserve Forest lands anywhere in the country. In light of USAID's interest in supporting biodiversity conservation, and the restrictive options for participatory management in Reserve Forest lands, attention turned instead to those "double protected" lands within the Protected Area network covered under the Wildlife Act of 1974.

These lands were ostensibly allocated for the conservation of biodiversity, but it was widely recognized even at the Forest Department that the National Parks, Wildlife Sanctuaries and Game Reserve of the PA network were in extremely poor condition, with rampant illegal logging, the lack of any management interventions and minimal resource allocation from the Forest Department budget. Also, the forest PA network was extremely small as a proportion of total surface area of the country (only 1.4% in 2002 compared to 5% in India and nearly 10% in Sri Lanka).

At the same time, USAID recognized that Government of Bangladesh policy documents had set ambitious goals for biodiversity conservation and participation on forest lands. The Forestry Sector Master Plan of 1994 in particular had called for an increase in biodiversity protected areas to 10% of all forest lands, and called also for participation of local communities in that process. However, little if any progress had been made toward these policy goals, and USAID assumed that the Forest Department (FD) would be open to consider approaches for improved effectiveness in these conservation areas.

In light of the deteriorating biodiversity resources despite ambitious conservation goals, USAID calculated that the Forest Department might be willing to try new approaches, including a form of collaborative management.

Concept Proposal and Development

Based on this logic, USAID undertook initial project design and feasibility efforts in April-May 2002, engaging the FD in an exploration of participatory models for protected areas.

With very few exceptions, the Department was strongly opposed to the idea of co-management of PA lands. Reference was made to the Wildlife Act 1974, and the fact that the Act did not allow for any involvement of communities in the management of PA lands. As a corollary to this, FD staff noted that any new permission to "allow people into" the PA lands under the Act would only contribute to the loss of biodiversity in them. Rather, the Department argued, the PA lands should be more forcefully protected by equipping the Department with the staff and equipment to ensure that protection.

But apart from these references to legal grounds, the driving reason the Forest Department objected initially to co-management was resistance to the central idea of allowing citizens to have a say and role in decision-making on any forest lands. Social forestry was considered participation, and anything beyond that level of participation was not considered welcome or necessary.

Additional arguments emerged about the intentions of the US Government in supporting the project idea at all. The assumption behind these objections was that the US Government would press to take the PA lands away from the FD and give them to the ethnic minority communities living inside or next to many PAs around the country. At two PAs, demonstrations were actually organized by local FD staff members, with local Bengali citizens demonstrating against the project on these grounds.

Acceptance of the Nishorgo Support Project by the Forest Department, and by the Ministry of Environment and Forests, was due in the end to a very small number of strong and forceful personalities. After initial very negative objections by the FD, the then Secretary of the Ministry of Environment and Forests took a strong stand in favor of testing co-management as a pilot. He refused, however, to make a unilateral decision to approve the project feasibility and the bilateral agreement in which it was included, but instead invited the full senior staff of the Forest Department to a discussion of the co-management concept at the Ministry.

Ten senior members of the Forest Department attended that critical discussion in 2002, with the meeting chaired by the Secretary, of which only two spoke out strongly in favor of testing the co-management concept. These two argued that the PAs under the Wildlife Act were so rapidly disappearing that something creative and different needed to be done, and that the Department would need to find a way to engage communities in a more comprehensive way than under social forestry. One of them argued that the FD had learned much from the success of social forestry, and should break new ground by expanding the participatory concept to the

management of PA lands. The then Chief Conservator of Forests also provided critical support in that meeting, and in light of these few strong voices and interest from the Secretary, the project design was approved and the process of selecting partners to work with the Department commenced.

Lessons Learned

This early process of design of support for co-management of PAs in Bangladesh generates three lessons:

The need for champions: Most notably, at least a small number of champions within the system (administration) need to support a new approach, particularly when it challenges the status quo. Those champions were few but held influential positions in the Ministry and Forest Department.

A compelling and field-tested approach: There needs to be a clear and compelling technical approach to be tested. The clarity of the co-management approach was not only tested in other countries, but it had been tested in visible and recognized community based co-management of wetlands in Bangladesh, and so provided a point of reference for the ''new'' application to the forest sector.
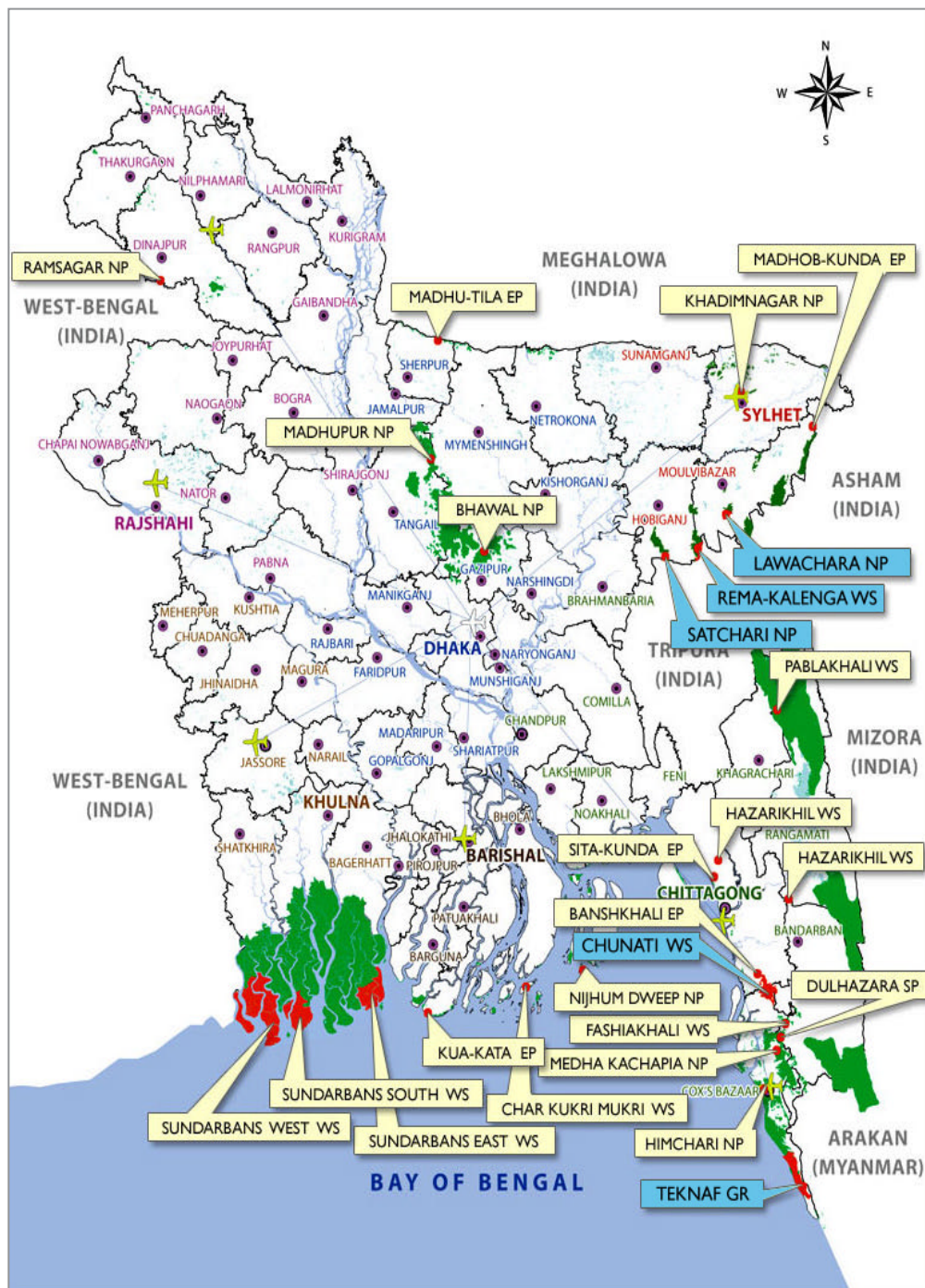
Critical condition of the environment and general acceptance that drastic measures were required: It was critically important that the current biodiversity and management status of the PAs be so bad. Nobody in the FD could rationally argue that their current approach to PA management was working, and that made it more difficult to reject a new approach out of hand.

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Protected Areas of Bangladesh, 2010

Lawachara National Park

Rema-Kalenga Wildlife Sanctuary

Landuse

- Forest
- Degraded Forest
- Tea Garden & Rubber Plantation
- Agriculture
- Settlements
- Water

- River
- Footpath
- Road
- National highway
- Remakalenga Wildlife Sanctuary
- Remakalenga Forest boundary
- 5 km buffer area of RWS
- International boundary

- Villages
- Beat Office
- Range Office
- Hat/Bazar
- Educational Institutions

Scale 1:100,000

Satchari National Park

Landuse
- Forest
- Degraded Forest
- Tea Garden & Rubber Plantation
- Agriculture
- Settlements
- Water

River
Footpath
Road
National highway
Satchari National Park
Satchari Forest boundary
5 km buffer area of SNP
International boundary

Villages
Beat Office
Range Office
Hat/Bazar
Educational Institutions

Chunati Wildlife Sanctuary

Teknaf Wildlife Sanctuary

Teknaf Wildlife Sanctuary map. Scale 1:200,000.

Landuse
- Forest
- Degraded Forest
- Agriculture
- Settlements
- Water

- River
- Embankment
- Footpath
- Road
- National highway
- Teknaf Wildlife Sanctuary
- Teknaf Forest boundary
- 5 km buffer area of TWS
- International boundary

- Villages
- Beat Office
- Range Office
- Hat/Bazar
- Educational Institutions

Image of Rema-Kalenga Wildlife Sanctuary. [Sirajul Hossain]

Image of Satchari National Park. [Sirajul Hossain]

Image of Lawachara National Park. [Sirajul Hossain]

Image of Chunati Wildlife Sanctuary. [Sirajul Hossain]

Image of Teknaf Wildlife Sanctuary. [Sirajul Hossain]
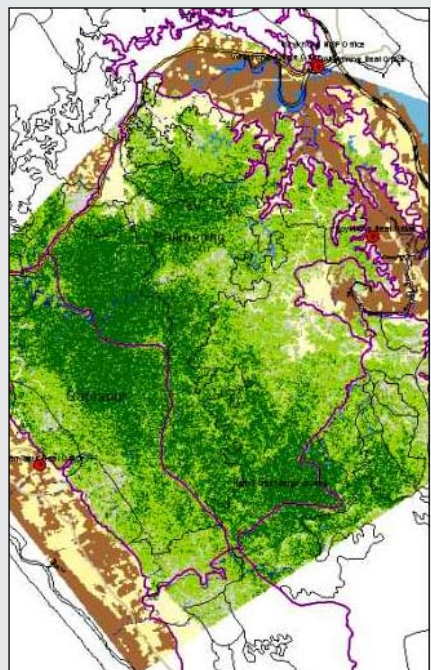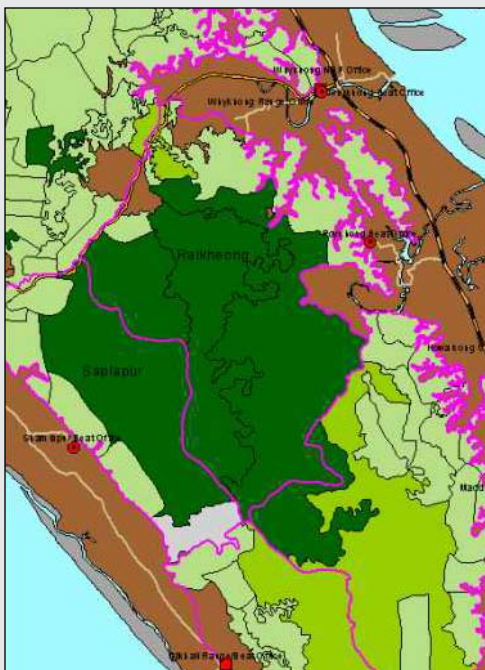
Quickbird imagery (on the right) was used to improve forest cover information compared to previously existing maps. Examples from northern part of Teknaf Wildlife Sanctuary.

Indicator species used in bird monitoring

With the objective of encouraging research by digitizing and making available difficult-to-locate documents, Nishorgo and its partners created CDs as research support tools. Included, for example, were Forest Department management plans and inventories previously available only through direct visit to the Department.

Nature tourism experts worked with entrepreneurs near Nishorgo sites to develop eco-cottage designs consistent with tourist needs and with the investment capacity. These two cottages are owned and operated by an entrepreneur near Lawachara National Park.
[Md. Tarek Murshed]
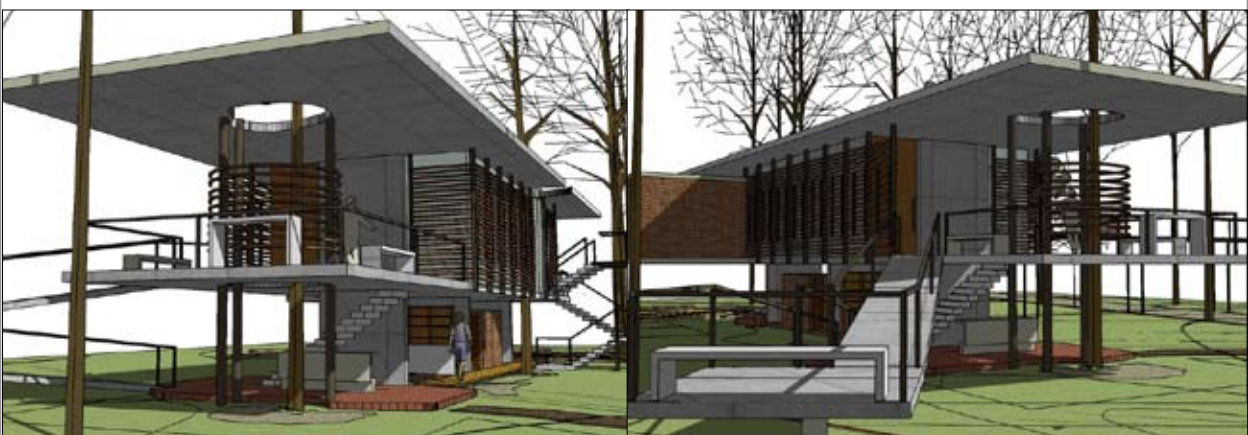
The design above (see top image) was the winning entrant in a national architectural competition co-financed by public and private sectors for a PA visitor interpretation center, and won by Vitti Stapathi Brindo Ltd. Adaptations of the initial design were constructed in the Teknaf Wildlife Sanctuary (middle image) and Chunati Wildlife Sanctuary (bottom image).

Traveller's Bag

Office organizer

Jewelry Kit

Folded Traveller's Bag

The Traveller Set

Pencil Holder

Traditional Tripura weaving adapted for inclusion into the 'Tripura Gift Collection'.

Fuelwood from forest PA is the primary source of energy for cooking from small households to large institutions around Nishorgo's two southern pilot PA. Under a partnership with two large madrassahs (one in Hnila and one in Banshkali), GTZ and Grameen Shakti, Nishorgo coordinated installation of biogas plants operating on night waste fecal matter. This interpretive signboard was installed as part of the process at the Hnila madrassah, home 500 residential students, plus another 1,000 day students.

Brickfields Around Teknaf Game Reserve & Reserved Forest

Ali Ahmed

Abu Hashem & Mostak

Whykhong R.O. & B.O.

Monkhali

Whykheong

Raikheong B.O.

Mankhali B.O.

Raikheong

Whyikheong

Saplapur

Shamlapur B.O.

Maddha Hnila B.O.

Madhya Hnila

Silkhali

Silkhali R.O.

Rajarchara

Hnila B.O.

Hnila

Mathabhanga

Hnila

Gafur & Haider Ali

Mathabhanga B.O.

Mochoni Beat Office

Hashem Member

Mochoni

Ali Ahmed

Mr. Ejhar

Abdul Monaf

Jaddimura B.O.

Md. Shahajahan

Rajarchara

Teknaf

Rajarchara B.O.

BAY OF BENGAL

MYANMAR

N

Scale 1: 90,000

1   0   1Km

Offices
- ⊙ Beat Office (B.O.)
- ⊡ Range Office (R.O.)
- ■ Thana Head Quarter
- □ Union Head Quarter

Brickfields
- ✚ Not in Operation
- ✚ Operation

Forest Types
- Game Reserve
- Reserved Forest

Line types
- 3 km line
- Embankment
- International boundary

Thana
- Teknaf
- Ukhia

Roads
- National highway
- Feeder road
- Rural road
- Bay of Bengal

Note: 3 Km red line is drawn as per Brick Burning Control (Amendment) Act, 2001

The map shows brickfields located inside or adjacent to the Teknaf Wildlife Sanctuary as of 2007. Brickfield owners had deliberately selected these sites due to the fuel wood available in the PA. From 2007, and under social and legal pressure, including from the CMO, a number of these brickfields have closed or relocated away from the PA.

These images comparing the same path in the southwest sector of Lawachara from 2005 (left) and 2008 (right) show the rapid re-growth of forest understory pursuant to community protection efforts

The project aimed to stimulate growth in sales of commercial items associated with the PA system, such as these t-shirts and hat. Goals were to raise Nishorgo brand awareness, generate revenue through managed logo license, and improve PA sales revenue. But without clear framework for logo or PA concession management, branded product lines did not continue.

Annotated trail guides for short, medium and long hikes, along with general PA brochures and other PA-related items for sale at Teknaf Wildlife Sanctuary. All written materials were prepared in English as well as Bangla.

In a public-private partnership between Nishorgo and the Radisson Hotel, Radisson staff led training sessions for all new eco-cottage entrepreneurs on food preparation and other aspects of hotel management.

At the launch of the Nishorgo Program in 2004, the Minister of Environment and Forests and the US Ambassador recognize the young man who proposed the Nishorgo name as part of a national call for proposals.

Elements of Co-Management: Governance, Planning and Policy

4

Development of the Collaborative Governance Model

Philip J. DeCosse, Ram A. Sharma, Utpal Dutta and Paul M. Thompson

The central objective of Nishorgo was to develop a formal collaborative governance model (or models) for forest Protected Areas (PA). While senior Forest Department (FD) officials generally accepted that a new and more participatory approach to PA management needed urgent development, there was no common understanding of what that model would include. For most FD staff, the reigning idea of "participation" in PA governance was understood to mean little more than interaction between FD staff communicating with those contacts (referred to as "our people") in and around the PAs. When Nishorgo began, many FD officers understood that collaborative PA governance would amount to an application of social forestry participative approaches (see box below) to the PAs. Concepts of inclusivity, transparency, and sharing power did not appeal to more than a small group of visionary FD staff.

Bangladesh Forest Department's Social Forestry Model

The Forest Department's social forestry approach evolved through projects in the 1990s into two models that now cover millions of trees planted throughout the country:

1. For degraded and encroached FD lands, each settler household selected and approved by an Upazila level committee is granted usufruct rights to (typically) one hectare of land. A plantation of short rotation species is established there by FD, with each household holding use rights for that tree rotation (depending on the species, for example 10 or 15 years) including any thinning, any crops grown in that land, and a guaranteed share of the final felling value.

2. On other public lands (such as roadsides) groups of local people obtain benefit-sharing rights similar to those on FD lands, and in this case, in return for guarding the trees, they receive a share of the final harvest value, with the other shares going to the land owning authority and – usually – to the Union Parishad.

The initial challenge was to assess social conditions around the PAs and propose a new model of collaborative PA governance for testing under Nishorgo. Field teams mobilized to conduct initial Rapid Rural Appraisals at all sites followed by more extensive Participatory Rural Appraisals (see Studd (2004) and multiple reports by Mollah et al 2004). Proposals for governance structures were then discussed and debated extensively over the subsequent 18 months, with the process led by the then-Project Director of Nishorgo at the Forest Department (Monoj K. Roy) and a consultant to Nishorgo (Dr. Khawja Shamsul Huda) working with staff of Nishorgo Support Project and the FD. The outcome of this process called for a governance structure that included a broadly representative Co-Management Council of 55 members drawn from all walks of life around each PA. A smaller executive Co-Management Committee would be elected from the members of this Council, with each stakeholder sub-group of the Council represented on the Committee (see composition in box).

This Council and its executive Committee are referred to as the Nishorgo Co-Management Organization (CMO), when referring to the full organization. Reference within the chapter may

be made to either the Council or Committee when those are being referred to specifically.

The diversity of socio-economic and environmental conditions at each of the five sites supported an approach that would allow different models by site, with governing structures themselves adapted to the social groups at the sites. This was consistent with experiences compiled in Borrini-Feyerabund et al (2004) and analysis of efficiency for biodiversity conservation organizations in Gjertson and Barrett (2004). By 2005, however, it became clear that only one model for all sites could be proposed, principally because the novelty of the proposed power-sharing was such that it would be difficult to get even one model passed, much less multiple variations.

Approval of the co-management model rested with the Ministry of Environment and Forests, and during the planning process, staff of the Ministry requested on a number of occasions a greater role in terms of numbers and responsibilities for local government officials in the Council and Committee. Consequently, more seats were allocated for staff of technical agencies (Department of Livestock, Department of Agricultural Extension, etc.) and the Upazila Nirbahi Officer (UNO) was made the chair. (An Upazila is a sub-District, there are 64 Districts or Zilas in Bangladesh and over 460 Upazilas. In each Upazila, officers from a range of Government agencies are posted and the UNO is the highest administrative representative of the Government at this Upazila level.) In essence, a perspective was introduced under which the Government – while creating a participatory structure – did not allow too strong a role for community representatives.

Co-Management Council and Committee Structure, 2006

Co-Management Council Structure

1 Upazila Nirbahi Officer (UNO) - Chairperson
1 Assistant Conservator of Forest or Range Officer – Member-Secretary
9 Representatives from the organized poor
13 Chairmen and members from relevant Union Parishads and Pourashava (closest wards to PA, at least 1 woman)
9 Representatives of poor resource users
6 Representative from resource owners (brickfields, sawmills etc)
3 Representatives from ethnic minorities
2 Representatives from local youth
6-8 Representatives from local elite
1 representative of other major stakeholders
1 Representative from law enforcing agencies
4-6 Representatives from other Government agencies
2-4 Representatives from local NGOs
Relevant Member of Parliament to act as Advisor
Maximum 55 members, including 10 women.
Term of those not officials or elected, 4 years.

Co-Management Committee Structure

1 Assistant Conservator of Forest or Range Officer - Member-Secretary
3-4 Representatives from local government (UP) (1 woman)
2-3 Representatives from civil society
2 Representatives from resource user groups
1 Representative from local youth
2 Representatives of resource owner group
2 Representatives from ethnic minorities
1 Representative of law enforcing agencies
2 Representatives from other Government agencies
1 Representative from NGOs
Upazila Nirbahi Officer (UNO) - Adviser

President and Vice-President to be elected by Committee members from among their membership. Term of office 2 years except for Member-Secretary and law enforcement agency representative

After review by the Nishorgo Project Government Steering Committee in 2005, the proposed model was formalized through a Government Order (GO). While not as strong or binding as a Law or Rules made under an Act, Government Orders are the usual means whereby the Government issues administrative decisions and carry great weight both for the concerned Department as well as the local communities. The Order was finally issued on August 10, 2006, and legitimized the already-formed Co-Management Councils and Committees. For the smaller Protected Areas, one CMO was put in place for the full PA, but for larger PAs, CMOs were established for each Forest Range within that PA. Thus, the 7,700 ha Chunati Wildlife Sanctuary had two CMOs while the 11,000 ha Teknaf Wildlife Sanctuary had three. Specific terms of reference for the CMO – including separate delineated activities for the Council and Committee – were fixed officially in this same Government Order (see box below).

This chapter examines the process of developing this formal collaborative governance model. We review the debate and discussion that led to the current Nishorgo model. The aim is to shed light on its underlying logic, and stimulate continued debate on what the most appropriate models for collaborative PA governance in Bangladesh should be.

(It should be noted that a new Government Order in 2009 has superseded this 2006 version, with the new GO now including all forest PA throughout the country. The new version was issued in 2009 after the end of the five year base period of the Nishorgo project, and after this chapter had been prepared. The analysis here is done on the 2006 version.)

Starting Assumptions and Subsequent Adaptation

When Nishorgo began in 2003, neither the Forest Department nor the Project implementing team at IRG had proposed the makeup of the future governance structure for PAs. This was to be informed by the experience of the Department, experiences elsewhere in Bangladesh, and experiences from other countries.

For many of the FD staff, the closest approximation to broad and formal participation in forest management came from social forestry. Yet the social forestry model of participation was inappropriate to large PAs and was developed for use and settlement of users within degraded forest rather than conservation.

USAID's Management of Aquatic ecosystems through Community Husbandry (MACH) Project had been operating for five years when Nishorgo began in 2003, and had evolved a two-tier approach to collaborative governance of wetlands complemented by a parallel set of livelihood support organizations (MACH 2007). Initially, small Resource User Groups (RUGs), each comprising about 20-25 households, were formed to provide traditional NGO-based livelihood support (training and micro-credit) to diversify and reduce fishing pressure. At the same time, Resource Management Organizations (RMOs) were formed around defined waterbodies (beels – depressions holding permanent water – and rivers) and the Government reserved the leases to use these waterbodies for the RMOs. For a large wetland such as the 12,000 hectare Hail Haor near Srimongal, eight RMOs were formed, holding rights to 22 out of 84 waterbodies known as jalmohals (36% of jalmohal area within the haor) (Thompson 2008). Generally, more than 50% of RMO membership came from the RUGs, but also other fishers, farmers and local opinion leaders and elites (selected based on perceived support for

sustainable management) were included in these community or people's organizations. MACH also invested in building the capacity of women through RUGs, and despite conservative social norms around Hail Haor, eventually about 25% of women in the RMOs were women.

Terms of Reference of Co-Management Council and Committee, 2006

Co-management Council	Co-management Committee
1. Convene an annual general meeting and at least one meeting in addition to the annual general meeting.	1. Act as the executive body of the Council and will be accountable to the Co-management Council for all their activities.
2. Provide pertinent suggestions to the Divisional Forest Officer (DFO) on any modification, addition or correction after reviewing the annual work-plan of the protected area.	2. Liaise with FD officials responsible for management of the Protected Area on local stakeholders' participation.
3. Take collective decisions on activities that have adverse effect on areas in and around the Protected Area.	3. Distribute the proceeds from goods and services from the Protected Area among the groups or teams linked with management activities according to the guideline developed by the Council.
4. Provide required guidance to the Co-management Committee on Protected Area management.	4. Support Forest Department in employing labor from groups/teams linked with Protected Area management in development activities undertaken by Nishorgo Support Project for Protected Area Management.
5. Develop policies for distribution of goods and services gained from the Protected Area among the stakeholders and also oversee such distribution among the stakeholders by the Co-management Committee.	5. Develop and submit project proposals requesting funds for development of the Protected Area and landscape zone.
6. Provide required approval to the Protected Area Annual Work Plan developed by the Co-management Committee.	6. Develop a work plan for expenditure of funds collected locally through Protected Area management and will ensure spending upon approval from the respective Divisional Forest Officer.
7. Play an effective role in quelling any conflict that arises among the members of the Co-management Committee.	7. Maintain proper accounts of all local collection and expenditure from Protected Area Management. All accounts needs to be audited by institution/organization as directed by the Advisor.
	8. Take required steps, upon approval from the Divisional Forest Officer, to initiate patrols for maintenance of Protected Area resources.
	9. Play a supportive role in containing any conflict arising between local stakeholders and Forest Department or any other government/non-government organizations.

From the early stages implementation of MACH, the main level of coordination with Government was through Local Government Committees. However, as the project evolved, these became co-management bodies with members comprising the leaders of the RMOs and of federations of RUGs (both types of organization having by then been legally constituted through registration as social welfare organizations), the chairmen of local councils (Union Parishads – the only tier of government other than national level in Bangladesh that is elected), and representatives of government agencies, including the UNO as chair and Upazila Fisheries Officer as member secretary. In early 2006, these committees were formalized by Government Order as Upazila Fisheries Committees. They form a platform for coordinating management between community organizations over the larger wetland areas and serve as venues at which stakeholders including RMOs could present their issues and find solutions to problems (Halder and Thompson 2007). Moreover, these Committees were adopted as part of a national strategy for inland capture fisheries (Department of Fisheries 2006).

A number of differences in the administration of wetlands and forest Protected Areas argued for a modified approach in forest PAs. Forest PAs are clearly under the legal jurisdiction of the Forest Department. Jurisdiction over wetlands is more complex – seasonally flooded areas are usually private land, but the permanent waterbodies (jalmohals) are state property under the Ministry of Land represented by the office of the Deputy Commissioner (highest administrative authority at the District level), who leases out use rights to these waterbodies with a preference for fisher cooperatives (Sultana and Thompson

Initial dialogue with community members at Satchari prior to formation of the first Council and Committee, 2004. [Nishorgo Support Project]

2007); hence, there is a history of little direct use or management of these waterbodies by government agencies. Collaborative management of the interior of forest PAs would need to include a clearly demarcated and active role of the Forest Department, not least because whenever damage to a PA occurs (felling, fires or encroachment, for example), the Forest Department is answerable for it. Furthermore, apart from those "Forest Villagers" (usually from ethnic minorities) with de facto rights to live in and use PA resources, use by other people of forest PA resources is technically illegal, whereas the many users of wetlands have long established and recognized use rights through a mixture of private land, leases, and common property.

One additional and important difference between the MACH conditions for collaborative governance and those of Nishorgo derived from the rate of productivity changes at wetlands versus forests. At MACH sites, interventions by the RMOs (with MACH Project support) to create sanctuaries, observe closed seasons, and stop harmful practices such as drying out of beels were shown to lead within two years to dramatic increases in fishing productivity. The rapid response of wetland productivity to conservation raised the direct association between management of the resource and livelihood benefits. Community organizations could be formed under MACH with the basic association that better management of the wetlands (including conservation) would equal more fish income for the community. At Nishorgo forest sites, benefits to community groups would not be so direct or immediate. Indeed, because the PAs by definition restricted direct extraction from the core areas, less direct solutions would need to be found, which associated conservation of the core zone with other economic benefits outside the core zone. We recognized that this lack of direct association would make it difficult to engage local resource users in direct agreements for participatory conservation as had been undertaken for wetlands.

Initial studies confirmed the diversity of stakeholders around PAs, their sheer number, and the scale and pace of resource extraction (see multiple reports by Mollah et al, 2004 and Studd, 2004). It became clear that PAs had become accepted as lightly guarded resources, open to use against some unauthorized payments depending on the amount and value of resources being extracted.

Starting Point: Stemming Rapid Forest Destruction

As Nishorgo's team debated the structure for co-management in 2003 and 2004, a clash of perspectives occurred between the Nishorgo field teams and the senior staff of the Forest Department. The Nishorgo team had put equal weight on the two objectives of livelihood improvements and conservation. IRG and its NGO partners (Community Development Chittagong, or CODEC, and Rangpur-Dinajpur Rural Services, or RDRS) assumed that enough livelihood activities could be introduced such that poor households would reduce consumption of and pressure on forest products. The Forest Department had as its priority stemming the extraction of forest produce that was rapidly degrading forests.

At a meeting in 2004, the difference of views between the NGO field implementing team and the Forest Department came to a head. The IRG team was called to meet with senior staff of the Department, including the Divisional Forest Officer, Conservator for Wildlife, and Nishorgo Project Director at the 75-year-old Shyamoli Guest House inside Lawachara National Park,. When asked by the Forest Department what the field project team was doing to slow increasing timber extraction, the following dialogue ensued:

> "We are forming user groups of poor households. Once we introduce livelihood activities, they will no longer need to go to the forest," responded the NGO field coordinator.
>
> "How many have you formed so far?" asked the Conservator.
>
> "Twelve", answered the team.
>
> "And how many people are in those groups?"
>
> "240", answered the Nishorgo team.
>
> "But there are 13,000 people living in the immediate vicinity of Lawachara National Park. By the time you form more groups and give access to livelihood improvements, the forest will be gone."

For the Nishorgo team, the message was clear. While group formation and household livelihood activities could continue, the focus had to shift dramatically towards addressing the rapid loss of forests. If forest loss was not slowed, then the very resource base from which long-term economic benefits might flow would be gone. Work on group formation with the poor had to be more closely and directly linked to conservation. That would be done by giving priority to participatory plantations in buffer areas, alternative income linked to protection, and community patrols as opposed to the standard set of individual livelihood activities familiar to field NGOs in Bangladesh.

This increase in emphasis on stopping forest loss played an important role in determining the co-management structure. The governance structure for PAs had to be capable of actually putting pressure on those directly involved in illegal felling of trees. Since it was widely understood that timber felling was coordinated at the highest levels (politicians, including

ministers), the implementing team knew that the governance structure for a given PA had to have authority and strength to confront these powers.

This explains why the final Nishorgo CMO structure included a range of Government agencies that could be drawn upon to check the felling. The Bangladesh Rifles was included, for example, in the logic that they had armed soldiers in the border forest areas where much of Bangladesh's forests are found, including four of Nishorgo's five pilot sites. This starting point also explains in part why "Resource Owning Groups" were included in the structure. In practice, their inclusion meant that some of the same timber traders and brick field owners that were destroying the forest were included in the structure intended to manage it. It was assumed that through a combination of social pressure and other means, those involved in forest destruction might be brought around to support conservation.

Inclusion of Union Parishad

It was generally accepted amongst those who designed the approach that some value could be gained from including the concerned Union Parishads (UP) in the CMO, since they are the lowest level of representative government in Bangladesh. The UPs have limited institutional capacity, and lack formal powers over lands, but they, and especially UP Chairperson, wield considerable influence within their jurisdictions. It is widely accepted that UP Chairpersons are closely allied with, and answerable to, political parties. Their exclusion from the process would create other problems, not least that they may sabotage important activities in their areas of which they were not a part. It was subsequently agreed to give the UP members a fixed role in both the broad Co-Management Council (13 of the 55 seats) and the smaller executive Committee (3-4 of the 19 seats).

Publication of the Co-management Council and Committee structure and terms of reference in the official Government Gazette in 2005 provided initial policy recognition for the structure.

Representational Inclusion of Those Living in or Immediately Adjacent to the PA

Union Parishad boundaries do not align with PA boundaries, and UP constituency populations represented by the UP members on Nishorgo CMO at Nishorgo sites included only a small portion that actually lived inside or adjacent to the concerned PA. With the objective of giving a more direct and guaranteed voice to those groups directly affected by the PA, three seats were allocated on the Council to "Ethnic Minorities" while another nine were allocated to

"Poor Resource Users." But the process for including this representation was debated at some length. One option was to introduce a semblance of the panchayat system from India, in which those directly affected populations near the PA would convene as a whole to agree on their position on key issues and choose a representative to become a member of the Council. This approach was not followed in the end, principally because no recognized governing authorities that could be included by name existed at this local level. Thus, the final arrangement did not include a strong element of direct representative governance by those citizens living in the immediate vicinity of the PA.

Design for Effective Decision Making

Attention was given to the balance between the inclusivity of a larger body and the agility and decision-making ability of a smaller Committee. Initially, a large body similar to the final Council had been proposed as the single management body for a PA. While this could include a wide range of key stakeholder representatives, such a large group would not be able to meet regularly and take rapid response decisions as needed. If the role as practical "co-manager" were to be fulfilled – meaning that management decisions could be taken in immediate response to management problems – then the CMO would need to be able to respond quickly and effectively on a host of issues. After some debate, it was agreed to include both an executive body (the Committee) selected from a broader and the more representative Council.

Representatives from each stakeholder group would be chosen by the respective groups themselves. Thus, the Forest Villagers would meet to select their representatives. But for more diffuse groups (such as "Resource Users" or "Resource Owners") no process was stipulated for determining inclusion from that sub-group into the Council

Voice and Power Commensurate with "Stake" in the Resource

One criterion considered for inclusion in the governing structure was the strength or importance of a group's "stake" in the resource (DeCosse and Jayawickrema, 1997). During the site appraisals the extent or importance of the stakes of different groups was considered. A larger role in co-managed governance could be allocated to those stakeholders receiving more significant benefits from the resource. One of the obstacles to this approach was the definition of "stake" in the first place. When defined as depending on the resource for livelihood, then it would result in an enhanced role for local poor villagers including Forest Villagers. But a similar case could be – and was – made for inclusion of more sawmill owners, timber traders, and brick field owners who also gain their livelihoods through forest extraction. Indeed, for forests including highly valuable hardwoods along with other timber and non-timber products, it became clear that it would not only be the poor who claimed a direct stake in the resources, but rather all those who were already benefitting from the forests, or might stand to benefit from them in the future. In the end, the desire for inclusiveness of all those with even indirect stakes in the forest PA trumped a more narrow inclusion of those directly affected. Allocation of seats within the Committee was not set on the basis of level of benefit from the PA. The outcome of this inclusive orientation was most notably uneven for "forest villagers" living inside the PAs: in spite of being the only citizens living inside the PA, they were not explicitly allocated any seats on the Council or Committee, but were instead included in the category of "ethnic minorities," which could include minority members from inside or outside the PA.

This has led to a number of anomalies. For example, Satchari is a small National Park (NP) tucked between tea estates in a relatively remote area of Hobiganj District. The closest towns are Deorgach, 8 km to the northeast, and Teliapara, 5 km to the west. Fuel wood traders park at edges of the forest and pay day laborers to fill their trucks with illegally extracted wood for later sale at Comilla or Dhaka. Few people live inside or at the edges of the PA, with exceptions including the Tripura Forest Village inside the Park and two small villages within a kilometer of it. Representatives from this Tripura Forest Village hold four of the 55 seats in the Council, a representation certainly not commensurate with their permanent presence inside the forest.

Meanwhile, the vast majority of Satchari Co-Management Council members reside from far away from the forest. Out of the 55 Council members, no more than six live within 2 km of the Park limits. Council meetings are typically held 5-8km away from the PA. The Committee's Chairman, Vice-Chairman and Treasurer (all Union Parishad members in 2008) each lived more than 4 kilometers from the Park, and had little or no interaction with the Park for immediate livelihood purposes.

Some critical anomalies of the Nishorgo representative structure were made clear from cases such as this at Satchari. The project team recognized that a smaller, and more immediately representative governing structure, would allow a more direct link between the resource itself – the Satchari PA – and the community of those most directly affected by changes in the resource's quality. A MACH-like adaptation – with an RMO representing those resource users of the Park – was considered and discussed. But it was determined that the Government – and particularly those at the Ministry of Environment and Forests that would need to approve the new governing bodies, would not allow this kind of adaptation to governing structures based on the needs at individual PA. A "one-size-fits-all" model would need to be adhered to.

Another similar imbalance between the importance of a group's livelihood stake in the resource and its role in the final CMO was made evident at Lawachara NP. Hundreds of destitute women from the northeast edge of Srimongal town walk 10 km every one or two days to take whatever fuel wood they can find in Lawachara NP. In the past, they have often had to pay a fee to the local Forest Guard to do so. They can be seen every day, walking single file back from the Park, each with bundles of fuel wood on their heads. The Participatory Rural Appraisal (PRA) process made it clear that these women depended to a high degree on what they could extract from the Park. The voice of such women – clearly with a large stake in the forest as it was managed at the time – would only have an opportunity for inclusion via the membership category of "Resource User Group Representatives" (male and female), with nine of 55 seats on the Council and two of 19 on the Committee. And even within this category, there would be no guarantee that such women – whose families' well-being depended on the forest – would be included at all. Living around Lawachara NP are thousands of poor who rely from day-to-day on the Park resources, and yet they ended up with relatively few seats in the Council or Committee.

Tea Estate Owners, Managers, and Laborers

Tea estates abut some 20% of the boundaries of each of the three northern pilot forest PAs. Clearly, the tea estates at those PAs were important stakeholders. Tea estate laborers (women and men) enter these northern PA daily to extract fuel wood and bamboo, either for their own livelihoods or for

Discussion in 2004 in Chunati as Council and Committee were being formed. [Philip J. DeCosse]

sale, and it is widely assumed that the laborers are also involved in organized felling.

The CMO as finally released in the GO did not, however, include tea estate laborers, managers or owners. The tea estate owners generally maintain a well-coordinated national organization, and as a group are extremely careful in any interactions they have with Government. Tea estate owners and managers have been particularly careful with regard to interaction with the Forest Department, not least because of conflicts that had occurred between Departmental staff and tea estates concerning rights to fell trees on the estate lands, all of which are under long-term lease from the Government. Although invited to take part in early convocations of the co-management councils, the estate owners and managers desisted. In light of continued unofficial dialogue with senior tea estate representatives, it gradually became clear that the owners and managers would not take part formally in any of the governing structures.

Part of the hesitancy of tea estate owners and managers stems from their own preoccupation with maintaining tree cover, albeit in the form of shade trees, for their tea. Shade trees – like the hardwoods in the forest PA – are subject to illegal felling by tea estate laborers, with significant costs in tea production. Not surprisingly, a number of managers made it clear in personal meetings that they would rather see the illegal fellers do their work within the PA if it meant that their own shade trees could be spared.

Without the participation of the tea estate owners and managers, it would not be possible to include the laborers. Tea estate owners and managers have been criticized for their treatment of tea estate laborers, and prefer to maintain tight control of access to any organized dialogue with those laborers. Any outside development organizations that wish to work with the tea estate laborers can only do this with approval of the estate owners. The team tried, but were unable to get approval from either the Tea Owner's Association or the Tea Laborers Association to include the estates and their laborers formally in the process. Without a green light from the Owner's Association for an individual estate manager to take part, there would be few opportunities to engage the laborers.

Thus, a number of critical stakeholders, at least for the three northern PAs, were not included in the CMOs as they evolved. Only later, in 2007 and 2008, did a number of tea estate managers (initially at Lawachara) begin to attend Co-Management Committee meetings, but even then their voice and participation was limited.

Role of the Forest Department

At the time the CMO structure was being created, the role of the Forest Department in the Councils and Committees was very much debated, with a focus on two issues in particular: (1) whether FD staff would be members of the CMO like everyone else or have special pre-determined roles or powers; and (2) which level of FD staff should be included.

In the end, the Government Order allows for the Member-Secretary of both Council and Committee to be the "Assistant Conservator of Forests (ACF) or Range Officer (RO) in charge of Range." As it has evolved, most of the Member-Secretary positions have been taken by the relevant ACFs rather than Range Officers. No formal role was given to the DFO, principally because it was assumed that he would be engaged actively in the process by providing support to the FD Member-Secretaries and through dialogue with high level local actors, particularly the UNO.

Allocating the important Member-Secretary positions to the FD raised concerns that the Department might wield too much power over the co-management process. An important counter-argument ran that the FD's direct responsibility for accounting for the PA, and its existing internal systems of reporting, would increase the likelihood that the governance process would be supported by a person ready to provide necessary time, capacity, and logistics to support the process. Since participating in the governance process was assumed to be voluntary, the FD staff member would be the only one whose paid job would include the responsibility to support the Committee and Council through this role. This would – it was argued – increase the likelihood that the Committee and Council would continue to receive the uninterrupted support required to make and implement decisions.

As the process evolved, another FD-related issue became more important than the position held by the FD staff on the Committee and Council. It became gradually clear that, apart from the one member formally included in the structure, other FD staff from the PA sites were distancing themselves from process and the governing structures. FD staff at all local levels, and in some cases even the assigned Member-Secretaries, spoke and perceived of "us and them" when thinking of the FD and the Committee/Council. Although more senior and centrally-located staff of the FD (CF, DCCF, CCF) would remind PA-level staff of the importance of the participatory process, such advice was not routinely acted upon. Most damaging to the process was the distance taken by DFOs, who commonly felt that they had no role in the governance process. Indeed, the DFOs were not formally included or mentioned in the GO establishing the Councils and Committees. And without an active involvement of the DFOs, support for a range of PA initiatives from the FD hierarchy would prove limited, as became evident at a number of PA. The DFO's participation is particularly critical for activities involving accounting of revenues or receipts, since the DFO is the audit point for divisional financial transactions. By 2007 and 2008, as PA entry fee sharing opportunities were being debated, the importance of including the DFO in the formal processes became increasingly clear.

Another practical problem emerged about the role of the Member-Secretary, designed to be a Range Officer or ACF. In many cases, the ACFs perceived themselves to be "above" the kind of minutiae of management issues presented by the Council/Committee process at a single PA. An ACF would normally have many ranges to oversee, and the CMO structure at Nishorgo sites each covered only one range. Many ACFs felt that they should not be taking so much time with the activities at a single range. Range Officers are assigned to a single range, and

January 2005 Co-Management Committee meeting at Lawachara National Park. [Philip J. DeCosse]

thus would seem in some ways to be the appropriate persons to take part in the day-to-day workings of a governing institution. But Range Officers are of a cadre calling for lower academic requirements than the ACF. In light of the inclusion of UNO, UP Chairpersons, and other elite, it became clear that Range Officers often did not possess the requisite background or experience to work on par with other CMO members.

In those CMOs where the Range Office plays only a minor role, however, other problems have arisen. As the FD's designated "Disbursing Officer" with a given range, the Range Officer manages expenditures across the Range, and accounts directly to the DFO, thus giving him a financial authority and role that bypasses that of his ACFs. Because of this authority, Range Officers have gained a power in the Department at times greater than their actual organizational level of authority. Because of this de facto authority, the inclusion of ACF in place of Range Officers as Member Secretaries could and did create new conflict. One of the proposed solutions to this ACF-Range Officer problem was to modify the GO to ensure that the Member-Secretaries would be designated administratively as "ACFs-in-charge-of-Range," thus ensuring that the ACF for a given range would maintain financial authority for that range as well as technical leadership.

Role of Other Government Officials

Those involved in Nishorgo considered the extent to which other government bodies (apart from the FD) should have a role in the CMO structure. It was widely agreed that it would be good to include local representatives of technical agencies of the Government, under the assumption that such inclusion would assist in coordination of technical Government interventions in project areas. In the GO, these representatives were given four to six of the 55 seats on the Council and two on the Committee.

After three years of inclusion of such local representatives of national technical ministries in the CMO, however, few benefits have resulted. Concerned officers rarely come to meetings and have instead sent junior staff in their place. The contribution of these technical ministries to the PA governance process has been minimal.

It was widely agreed that the Upazila Nirbahi Officer (UNO) – as the highest administrative officer at sub-District level – should be part of the Committee and possibly the Council as well. As the designated "Advisor" to the Committee, the UNOs attend meetings periodically. It had been assumed that UNOs would ensure coordination of local administrative or civil actions. It was true that UNOs attended Council meetings (meeting dates were often organized around

their availability), but few of those UNOs have engaged sufficiently to understand issues of concern at the PA level, nor have they provided the coordination role expected of them. And their lack of understanding of participatory conservation, or even the terms or objectives of the Government Order for co-management, resulted in their playing a very limited supporting role in the governing process. Better organized efforts to orient and engage the UNOs – and more generally, members of the Local Government service – might assist in enhancing the value of their participation in the process. The UNOs remain the most important Government officiasl at the Upazila level, and at the least the CMOs need to be sure that UNOs will not oppose conservation management efforts.

The other controversial decision regarding Government participation was that of inviting the local Member of Parliament as Advisor to the full Council. Ironically, this decision was not made expecting a benefit, but rather because their exclusion was thought to be a risk to the Council and Committee. If they were excluded, they would find – it was assumed – ways of blocking the activities of the Council to benefit themselves. In the years since Council formation, the MPs have been virtually absent from the process. With hindsight, it appears that their inclusion did not cause any harm to the co-management governance process, and may have assisted it through avoided conflict.

"Landscapes" and the Physical Boundaries of Co-Management Governing Authority

For each of the three smaller northern Nishorgo PAs, one CMO was assigned the role of governing the full PA. But in the larger southern PAs, it was not clear whether there should a single CMO for the full PA or multiple CMOs. One option discussed was to align a number of CMOs with the boundaries of the Union Parishads covering the PA and its users. In the end, co-management areas were aligned with the boundaries of existing FD Ranges within the PA. This would allow the territory of the designated Range Officer for that given range to coincide with the territory of the newly declared Council. It would also allow the FD funding in support of co-management to be allocated to the same range and Range Officer associated with the Council. This has minimized potential administrative confusion between the CMO and the FD. Forest range boundaries within FD lands were fixed many years ago, and were typically determined on ease of access and management by the FD staff themselves, so it is not evident that these criteria would align with cohesive social units within those ranges. Such problems were considered at the time of fixing Council boundaries, but a more efficient solution than using the range alignment did not emerge, so the Nishorgo team proposed – and the GO included – the demarcation of Council boundaries to align with range boundaries for the Teknaf and Chunati PA. Future forest PA co-management development would probably be wise to follow this same approach.

Constitutions, Rules of Operation, and Registration

Work began in 2004 on drafting constitutions and rules of order with the CMO. Constitutions for all the CMO were completed by 2005, but were not an active focus of attention until the formal release of the Government Order was completed. At that time, with the increasing recognition of the organizations by the Government under the 2006 GO, and opportunities arising for the organizations to manage finances (including grant funds under the Landscape Development

The laying of a gas pipeline directly through Lawachara National Park in 2005. Controversy over the issue stimulated a more active early development of the Lawachara Co-Management Committee. [Philip J. DeCosse]

Fund program), a reinvigorated focus on the social and legal status of the organizations returned to the forefront.

In early 2007, the Arannayk Foundation considered giving grants to the Nishorgo CMO, but noted that it could not do so without one of the three standard types of recognition given to community organizations: registration with the Social Welfare Office late at Upazila level, registration as a Joint Stock Company under the Society Act, or, in the event that funds might be given to the organization from outside Bangladesh, registration with the NGO Affairs Bureau. The most common of these three is the Social Welfare registration, and it was this path that was followed. Registration with Social Welfare implies recognition by the local Government that the organization would work for the betterment of society, but does not confer the status of NGO on such organizations. Nor does it enable an organization to receive funds from outside the country.

As the CMO began to follow this path of Social Welfare registration, one difficult issue arose. Social Welfare-recognized organizations cannot include any positions allocated formally to Government. As the application process evolved, a number of FD staff members stated that they could not take part in any registration at Social Welfare, unless the FD was removed from the Co-Management organizations. The team learned later, however, that the Government members could include their names in the Social Welfare registration process, so long as they were not included by position or title. Thus, the FD Member Secretaries were included by name, rather than in a position allocated to the FD itself. (The GO ensured that the Member Secretary would be the ACF or Range Officer in any case.) Overcoming this constraint required considerable persuasion from the senior FD staff members, and particularly the Project Director, but in the end it largely succeeded. As of early 2008, six of the eight Nishorgo CMO had been recognized by Social Welfare.[1]

As part of this registration process, the constitutions required for Social Welfare registration received close attention and review by the Committees, and were all ultimately approved by the Councils. Constitutions for each of the Nishorgo sites were different due to debate by Committee and Council members, but the broad elements of the constitutions were similar. All of the constitutions were attached with the application (in Bangla) for Social Welfare registration.

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[1] For reasons of internal disagreement, the other two have still not registered with Social Welfare.

Lessons Learned

A number of lessons can be identified from Nishorgo's efforts in building a model for collaborative governance of Protected Areas:

Nishorgo decided early to focus on stopping forest destruction and that decision was an important driver of the governance model subsequently developed. In the light of escalating extraction of forest produce from the PAs, the Nishorgo team decided that it needed to stop the hemorrhaging of such loss, without which the entire Nishorgo pilot would have been deemed a failure. The Council and Committee structure was influenced by this concern, allowing as it did the inclusion of local elite persons assumed to be in a position to slow organized logging and fuel wood extraction. Powerful voices were included, giving a strong role for Union Parishad and commercial timber users (timber traders, brick field owners) that would in theory be brought around to advocate for the cause, and even the Police, the Bangladesh Rifles, and the Army. The governing structure thus became relatively elite-dominated in the expectation that it would be able to take social action against illegal fellers.

Time has shown that to a degree this approach was effective in slowing the loss (see chapter 8 monitoring and chapter 10 on bird indicators). Illegal felling – while not stamped out –slowed at Nishorgo sites. The pressure brought by these elites, and Committee-coordinated community patrolling have been two of the most important factors in that slowing. Given the urgency of minimizing loss of trees, it was probably both appropriate and necessary to include local elites. Moreover, this was still a broadening of participation compared to the FD-only management that had preceded co-management. But the inclusion of so many locally powerful stakeholders has silenced the less powerful. Women, the poor and ethnic minorities, while represented formally on the CMO structure, have not felt confident to make their voices heard forcefully and systematically.

The Co-Management Organizations were not in the end as broadly representative as expected of the directly affected citizens of the area. The structure of the CMO gave inordinate weight and authority to individuals and institutions not directly affected by the PA. The inclusion of Union Parishad (UP) Chairmen in the CMO represented a link to elected local officials, but the constituencies of these elected UP officials covered an area well beyond the boundaries of the PA. Overall, UP Chairmen have exercised disproportionate influence in all the Councils and Committees, in spite of the fact that only a small portion of UP constituents live in or near the affected PA. Inclusion of a more active and vibrant voice from local people with a direct stake in PAs would have made for a governance structure more directly concerned with the well-being of the forest (and their relation to it).

Some effort was made to allay this representational issue through formation of organized and associated Forest Resource User Groups (FRUG) made up of poor individuals within the immediate impact area of the forest PA. These were to be federated along the lines of the approach followed by partner NGO RDRS, with Federation directors taking seats on the Council reserved for the "representatives of resource user groups." Two problems arose in applying this approach. First, the logic of Federation development followed by partner NGOs was targeted on inclusion of the poor, irrespective of their association to the target forest PA, so that although Federation user group members came from the forest vicinity, they were often

not directly impacted by or interested in forest PA issues. And, secondly, even where active Federations developed, they were only able to hold a maximum of two seats (out of 55) on the Council, since that was the maximum allocation allotted for them. So at best, their voice would be limited.

Federations of poor using PA resources and adjacent lands need a more explicit and potent role in future PA governance. Rather than being formed from only those user groups facilitated by the project partner NGO, such federations should draw from a wider representation of the poor from those villages directly linked to the PA. Such poor and resource-using groups for a given PA should have an increasing role in PA management as their capacity develops and they may themselves be registered as Social Welfare organizations.

It is worth noting such a federation of poor user groups has resulted in more effective participation in MACH and in other countries. One of the best examples is the Bunaken National Park co-management model in Indonesia. There, a "Management Advisory Board" includes representatives from national, provincial, and local government agencies; village stakeholders; the private tourism sector; academia; and environmental NGOs. This Board is complemented by a "Concerned Citizens Forum" independently representing the directly affected local population, including the poor, so that their voice can be heard by the Board (NDPA, 2004; Erdmann et al 2003).

Both the voting weight and the composition of the CMO should be revised for future PA co-management sites. A number of specific lessons have been learned about those Nishorgo CMO members who might be gainfully excluded, or have their roles limited, in the future. Most clearly, membership of Upazila level officers of government agencies (e.g. Department of Agricultural Extension) should be limited to only those who will or have played a significant role. While in theory they might be helpful, in practice these Council members have been virtually absent from the entire process. They can be contacted when and if the Committee should need information or support from these Departments.

It became clear during Nishorgo interventions that the responsible DFO should have a formal role in the governance arrangement as "Co-Advisor" to the Committee, principally as a means of ensuring his support of the process. Involving the relevant UNO as a co-advisor is also critical to success, but the UNOs rarely have the context or time to maximize their potential support to the process. DFOs, on the other hand, will be aware of relevant issues in the wider context of the FD. If both act as "Co-Advisors," this might enhance links with the broader civil administration and the technical support of the Forest Department.

Site-Specific Governing Structures Need to be Allowed for. Nishorgo's governing structures at pilot PA followed a "one-size-fits-all" approach, and there were sound reasons that it had to be that way in the beginning. But without greater flexibility to the governing model, and one in particular that would allow a greater role for those directly affected by the conservation or degradation of the PA, the model will continue to lack a focus and dynamism necessary to long term success. As noted above, a new structure would need to allow a greater voice to those directly affected. But it would also need to allow for considerably different structures depending on the social and ecological characteristics of a given PA. A PA such as Satchari – surrounded almost entirely by tea estates and with few residents in the immediate vicinity –

should have a significantly different composition than that of Chunati, with its large population in the immediate landscape.

The issue is even more significant where communities have lived inside the target forest areas since the colonial period or before. Such is the case for the Modhupur tract – including the territory of Modhupur National Park – and for much of the Chittagong Hill Tracts. The clear and historic presence of indigenous peoples in these areas speaks for a much more significant role in the governance structure than that defined in the strict allocation of seats within the Nishorgo model. Future Council-Committee structures need flexibility in numbers to ensure stronger representation of ethnic minorities where they are significant users, and other directly affected stakeholders.

The governance structure should clarify a specific role for key levels of the Forest Department staff, not just the Member-Secretary. The DFO clearly needs to be included in the governance process with an explicit role, the most optimal being that of Co-Advisor to the Committee. But the roles of other FD local staff should also be made explicit. Beat Officers are the front lines of the Department throughout PAs, and need a role within the organization. Where ACFs fill the position of Member Secretaries, the Range Officers also need an explicit role and inclusion. One of the central and critical roles of the FD is to provide facilitation and support to the Co-Management organizations, and without the explicit involvement of all levels of staff in that process, this commitment will be slow to develop.

Conclusion

Nishorgo's model for collaborative management represents an important step forward. The Co-Management Council and Committee structure allows a clear measure of representation of stakeholders from the immediate vicinity of the PAs. By comparison with earlier management approaches – centered on the principle that the Forest Department made all the decisions – this new approach is an improvement. But gaps remain, most notably in the degree of representation of key stakeholders, the adaptability of the model to the social and ecological needs of different forest PA, the integration of the FD in the governing and facilitation process, and the dominance of select stakeholders (particularly UP Chairpersons) disproportionate to their numbers within the governing structures.

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Lawachara National Park
[Sirajul Hossain]

5

The Pace, Nature and Logic of Empowerment at Co-Management Sites

Utpal Dutta, Philip J. DeCosse, and Ram A. Sharma

Several Nishorgo-commissioned reports have explored dimensions of the processes and outcomes relating to the empowering practices of previously marginalized co-management stakeholders. In 2005, a gender assessment (Rahman *et al*., 2005) reviewed the status and options for strengthening women's role in co-management. Subsequently, Dutta (2006) revisited the gender issue and also explored the empowerment process for the poor and ethnic minorities. In 2008, a study led by an external consultant and including members of the Forest Department and the Project team, assessed the growth and development of the eight Co-Management Committees with the objective of recommending ways to strengthen them (Khan *et al*., 2008).

This chapter examines how empowerment evolved, identifies some reasons for the outcomes that occurred, and draws a number of lessons for the future.

Starting Assumptions and Subsequent Adaptation

When the Nishorgo co-management process was designed and during its early implementation, the underlying assumption was that local stakeholders would – if given the opportunity – seize the chance to play a role in co-management of Protected Areas (PAs). Although it would take time, it was expected that even poor and other marginalized stakeholders would begin to use the authority they would gain from Government Orders and associated rights, and that they would assert their rights.

The history of social forestry was cited by the Forest Department (FD) as evidence that this transformation would occur. In some parts of the country, particularly in Tangail and Mymensingh Districts, north of Dhaka, local people had shown little interest when social forestry programs began in the early 1990s. But after receiving income through benefit-sharing packages, word spread and more local households came to demand similar opportunities from the Forest Department. The team recognized that such participation would take time under Nishorgo's co-management model, but the general assumption was that it would ensue. Both the Government Order (GO) formalizing the Co-Management Committees and Councils and the Government-approved PA Management Plans for Nishorgo sites included opportunities for Councils and Committees to assert their authority and take part in managing and benefiting from the PAs.

In the first year after the first Co-Management Organizations (CMO)[1] were formed, however, it became clear that the empowerment process was not taking place as quickly as expected. Even after the approval and release of the GO and the Management Plans, CMOs

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[1]   The term "Co-Management Organizations (CMO)" describes the full governing structure created by the Nishorgo Government Order on co-management, meaning that both Councils and their executive and implementing Committees are included. If the text refers to one specific part of the CMO (Council or Committee), it is done so by name.

still looked regularly for guidance about what they could and could not do. They hesitated to raise issues collectively with the Forest Department, or other government agencies. They regularly looked for approval or at least consent from the Project staff. And marginalized groups generally responded to new opportunities for asserting rights even more slowly than the Committees themselves. Although on paper the Forest Department had opened the door to shared governance, an active governance process, in which the heretofore marginalized find and assert their voice, was not occurring at the expected pace.

Participatory and Rapid Rural Appraisal methods were used to better understand governance and resource issues after Nishorgo's launch. [Nasim Aziz]

The approved PA Management Plans included strong language opening the door for the CMOs to be part of decision-making. Under those plans, silvicultural operations in the PA should only be done by those individuals designated as "beneficiaries" to the PA management process. This language, and the spirit of the PA Management Plan, opened the door for the CMOs to pressure the FD to ensure that such opportunities for labor would go to the community patrollers or other community members in need. FD often engages this labor at little or no cost from forest villagers as part of an unwritten arrangement by which those Villagers are allowed to remain on their land. But the FD may also engage other local labor. With CMO formation and Management Plan approval, such engagements of labor by the FD – executed independently of the CMO – should have been done in concert with the CMO, but such consultation rarely took place, and indeed the CMO rarely pushed for it to happen.

In addition to the rights included in the PA Management Plans and the Government Order, FD senior staff (particularly the Project Director) informed all participating Divisional Forest Officers (DFOs), Assistant Conservators of Forests (ACFs), and Range Officers that the FD's own Annual Development Planning process should be executed jointly with the CMO. This, too, opened the door to a more active involvement of the CMO in knowing what was being planned and being part of the solutions.

The remainder of this section offers suggestions of explanatory factors for the slower-than-expected pace of empowerment at Nishorgo pilot sites.

The perceived need for rights to be re-stated and re-articulated, usually in written form

While the GO and the Management Plans were prepared in the spirit of promoting basic rights and roles for the CMOs and associated local stakeholders in PA governance, both CMO members and the local FD staff repeatedly cited the lack of an explicit statement of rights. Generally, in any dialogue about granting rights to the CMO and its members, both CMO and

the FD pushed for an even more explicit clarification of rights than was included in the relevant authorizing documents.

It was proposed by Project and senior FD staff, for example, that it would be in keeping with the GO and Management Plans for the CMO to operate small informal concession operations on PA lands to serve nature tourists. On numerous occasions, however, local FD officials either questioned or halted such ideas by claiming that "it is not written anywhere that this can be done." Indeed, this explicit right – to operate concessions on the Government PA land – was not explicitly included in any of the key authorizing documents. But rather than the CMO asking the grounds for rejection of such requests ("where does it say that it can't be done?"), the local FD argument was generally accepted. The CMO members were not willing to challenge the decisions of local FD staff, even where they might have, either by challenging them directly or appealing to higher FD authorities.

Risk to the élite members of CMO from making a "wrong" move

The predominant role given to the Union Parishad (UP) members was noted in the previous chapter. One outcome of this preponderant role was a relatively lower willingness of the other CMO members to challenge the status quo. UP Chairpersons may be aligned with vested interests in the PA, and may stand to lose support from key parties as and when power relations at the PA change. Whatever the exact cause, it did become clear that UP Chairpersons remained less challenging and confrontational – certainly in the area of pushing for PA management rights – than had been expected.

Lack of local FD leadership in facilitating empowerment

While there were a number of exceptions, it would be accurate to say that most of the DFOs, ACFs, and Range Officers discouraged CMOs and other local stakeholders from exercising their new rights and gaining power. The Project Directors of Nishorgo at FD made a number of field visits where they stated their support for CMOs and for their own staff playing a facilitation role to implement the project, but this guidance was not systematically followed. Rather, more than a few DFOs and ACFs would deliberately distance themselves from the CMO so that they could blame any forest problems on the new CMOs.

Roles and effectiveness of the facilitation teams at field sites

One would have expected the Project team, including its partner NGOs, to be in the forefront of pushing for greater empowerment of the CMO and related stakeholders. While the team did indeed make strides in this area, it did not perform as effectively as it might have. One reason is the precarious position of partner NGOs under projects like Nishorgo. The empowerment roles required by Nishorgo called for the partner NGOs – in this case Community Development Centre Chittagong (CODEC) and Rangpur Dinajpur Rural Services (RDRS) – to assist CMOs in directly challenging the government when necessary. However, such direct challenges by NGOs to government staff is considered risky by NGOs, especially where their criticism of government may be linked to negative feedback of their work in general, since there can be repercussions for that NGOs ability to win future project from the government.

Due in part to such possibilities for retributive action by the Government against NGOs that become too confrontational, participating field NGOs under Nishorgo – and indeed under other projects – rarely emphasized or gave priority to political empowerment. Rather, they focused on economic empowerment, assuming that improved economic situation would lead to better ability to challenge the status quo. In practice, the bias resulted in a greater emphasis on poverty reduction activities under Nishorgo and a lesser emphasis on social empowerment. As the project progressed, a shift towards social empowerment activities was pursued, but the NGO partners – or at least their field staff members – were much more comfortable with economic activities than they were with the complex issues of changing power relations through strengthening the CMO structure.

Hesitance to believe that the status quo can change

One of the remarkable characteristics of citizens' views of governance at the Nishorgo PAs was the deep-seated belief that the status quo would not change and that the élite would remain in control, no matter what changes in rights might be promulgated on paper. This resigned attitude towards new governance structures perhaps reflects the accumulated weight of many years of corrupt governance at this level. It was extremely difficult, for example, to build momentum for challenging illegally located brick fields near the Teknaf and Chunati sites in the south because both rich and poor believed that those brick field owners would still be there well after any project intervention had been completed. In spite of GO and Management Plan statements to the contrary, few of the poor or otherwise marginalized believed that they would ever truly have a voice vis-à-vis the Forest Department, or in the face of the local élite. The Nishorgo project team underestimated this hesitancy of the poor to take up opportunities to assert power. Once recognizing the shortcoming, the Project team put greater emphasis on such activities as:

- Obtaining government approval for financial resource allocation to the CMOs from entry fees

- Working to obtain more formal rights and authorization for CMO-delegated individuals to take part in forest restoration in both buffer areas and degraded core areas

- More training for and re-orientation of field level FD staff in co-management

- Developing rights-based manuals for local communities (See DeCosse and Ward, 2006)

- Strengthening other powers and written authorities for the CMOs

These were all efforts to more formally clarify those rights granted to the CMOs.

The nature of empowerment at Nishorgo sites

When the project began, the project team expected empowerment to be manifested by demands from the CMOs to share in benefits from PA management. We expected, for example, that

the CMOs would demand that designated community patrol members get work in subsidiary silvicultural operations. Or that no contracting be executed by the FD without full CMO prior notification and awareness, or that the CMO might expose improper behavior on the part of local FD officials or other local people, and press for appropriate punishment of such accused actors. In fact, although such exercises of authority rarely occurred, the CMOs did assert themselves in other ways.

Perhaps the most public exhibition of the empowerment process took place at Lawachara National Park regarding a gas pipeline laid through the Park in 2005 and 2006. From the time that Union Oil Company of California (UNOCAL) proposed to lay the pipeline (Chevron later bought UNOCAL's rights), the incipient CMO voiced concerns about the process by which that decision was made. Two years later Chevron decided to conduct seismic testing in the Park area. This decision, too, raised concerns not only at the local level but also at the national level; the Lawachara CMO spent considerable time discussing and debating

Community members raising their hands to join in patrol group in the Dolubari community next to Lawachara National Park. [Nishorgo Support Project]

the position it should take, and it eventually expressed its concerns forcefully to Chevron. The process has strengthened the Committee in its willingness to take a public stand on issues of concern to the area, even if it has not been able to significantly affect its outcome.

Empowerment processes also evolved in relation to community patrolling. Since 2006 it has been apparent that the number of offense cases filed by the FD against local people has fallen considerably. A major factor explaining this decline has been the increased confidence and role of the patrollers within the forests. Whereas previously, the FD would issue offense cases first and inform people later, now the patrollers are aware that cases might be filed and they often intervene with the FD to preempt escalation of conflict into the courts, at the same time persuading offenders not to continue felling trees. This is an expression of increased empowerment by the patrol groups and their effectiveness in reducing logging.

A third example of empowerment as it has evolved comes from the ethnic minority communities at Lawachara and Satchari National Parks. Although it is premature to say that a permanent change has taken place in the status and rights of the ethnic minority communities there, it would be fair to state that the social status of minority members on the CMOs has indeed risen. The voice and strength of the leader of the Khasia Forest Villagers within Lawachara (known as the "mantri" or minister) have grown as the years of Nishorgo have progressed. A similar process has evolved for the Tripura community within the Satchari National Park CMO, where the status of the mantri and the leading women of the Tripura community are increasingly strong in governing decision-making.

Engaging women

Nishorgo aimed to support active involvement of women at field sites. One central feature of this strategy was the deliberate allocation of alternative livelihood opportunities to women. Such women-targeted alternatives included nursery development, poultry management, pig rearing (for the Tripura), and weaving. The Tripura Gift Collection value chain was intended from the beginning to be a woman-focused business opportunity. In addition to income opportunities directed to women, the project expected women to be actively involved in PA governance. This focus on women was followed not only for reasons of equity, but also because it was assumed that active involvement of women around the PAs was essential to successful conservation.

A gender assessment was conducted in 2004 (Rahman et al., 2005) to guide this effort with the aim of developing "site-specific and stakeholder-specific strategies for engaging women in a way that increases the likelihood of success of the PA co-management effort." This gender assessment team developed a list of recommended strategies for engaging women more actively at many levels of the project. But the gender recommendations were too numerous, not sufficiently grounded in the complex gender relations at community level, and not as practical as they needed to be. As a result of this shortcoming, the project team was not as successful as it should have been in developing subtle and yet clear strategies for engaging women more forcefully and actively in the governing process.

Poultry rearing, such as this example at Rema Kalenga, was extended through training at all Nishorgo sites. [Sirajul Hossain]

It became apparent by 2006 that there had not been fundamental improvements in the empowerment of women. Although the GO for the CMOs provided for female members, there were virtually no woman active in the eight CMOs. The project commissioned a new study on the empowerment status not only of women, but also of ethnic minorities and the poor. This study (Dutta, 2006) proposed a shift in emphasis away from a predominantly economic empowerment approach (that up to then had been the implicit approach of the field team) towards a focus on more significant roles for women in the governance process. It also identified specific activities for women that would enhance their participation in the conservation process.

One positive indication of changing gender roles comes from the involvement of women in forest protection and patrolling. The idea of involving women in group patrolling of forests only emerged after a CMO visit to similar co-managed sites in West Bengal (India) in 2006. Three female CMO members took part in that visit and learned of Indian women patrolling and protecting forests near their houses. During the debriefing upon their return, these travelers requested that efforts be made to promote women patrolling within Bangladesh. When the Project team discussed the importance of testing female patrols, it was assumed that such a proposition

would be rejected outright by the CMOs and by local leaders around the PAs. Nevertheless, two groups of women volunteered to patrol, one at Lawachara National Park and one at Teknaf Wildlife Sanctuary.

In the short time that they have been operating, these two women's patrols have generated important insights into how gender-differentiated interventions can contribute

In the villages on the western side of the Teknaf Wildlife Sanctuary women remain veiled in public, and are observed outside of households with less frequency than in other Nishorgo sites. Here, the women at Baharchara near Teknaf take part in an environment day celebration. [Goutam Biswas]

to conservation. While the men's patrols operate principally at night time and alone in the core zones of PAs, the women's groups operate principally during the day and travel along the PA edges. The women's patrols are far more likely to interact with households in the area, thereby acting as a vector for messages about co-management and about the importance of reducing illegal felling. In some cases women, while patrolling, have gone directly into the homes of families suspected of timber extraction and examined their storerooms to see if the accusations were correct. When asked about this type of behavior, men from the same community stated that for reasons of maintaining social norms, they could never go into another family home in this way.

Another distinguishing feature of men and women's patrols revolves around the perceived social benefit of the patrolling process. While men in general were far more interested in obtaining direct economic benefits in return for patrolling, women expressed more interest in the opportunity to be out and about in a cohesive social unit. It appears that female patrols provide a happy coincidence – meeting forest conservation needs and also the interests of women for social interactions and making a contribution. As a result, woman patrol activities were expanded as the project period progressed.

Engagement with ethnic minorities, and especially indigenous groups

While the status and role of women in society near Nishorgo pilot sites can at least be discussed openly, the status and rights of indigenous minorities is generally a taboo subject for discussion in open foray. Assessments at Nishorgo sites have made it clear that a persistent bias against indigenous minorities pervades social relations in and around the Nishorgo PAs. In the first gender assessment, women young and old from ethnic Tripura communities stated their fear and discomfort at walking alone to and from nearby towns, for fear of abusive treatment they regularly receive at the hands of non-minority populations.

The topic of discrimination against indigenous minorities is also difficult to raise in the FD because of the social and political implications of recognizing those minorities. Forest Villagers – mostly made up of different ethnic minority groups – reside on lands granted to them within the Lawachara, Satchari, Rema-Kalenga, and Teknaf PAs. Although these Forest Villagers live

within the boundaries of PAs with the earlier consent of the FD, today's FD officials hesitate even to broach a discussion about the terms of their presence on FD land. During a visit to Lawachara National Park in 2006, two regional experts on conservation (Ashish Kothari of India and Sarath Kotagama of Sri Lanka) both recommended urgent clarification of tenure status and rights for these minority Forest Villagers. While a resolution of land rights is a complicated challenge and one that is unlikely to be addressed without the highest political support, Nishorgo has worked towards more modest incremental empowerment of ethnic minorities at co-management sites.

One of the leading fears of the Forest Department related to minority Forests Villagers stems precisely from the assumption that Forest Villages will take advantage of political support to demand land rights within the PAs. Because of this concern, and possibly also the personal biases of select FD officials, the FD as a whole at Nishorgo sites has not substantively engaged with indigenous minorities on issues of land rights or other rights related to forest PA benefits. However, leading members of the Department have demonstrated a much more open approach to interaction with Forest Villagers.

The project team, for its part, also made errors in its interaction with indigenous minorities. The Nishorgo team began in its interactions with the indigenous groups by placing an emphasis on livelihood activities, under the implicit assumption that the indigenous communities saw livelihood activities as a highest priority. But it subsequently became clearer that for several indigenous groups, enhancing economic opportunities was less important than enhancing rights and recognition. In the Khasia Forest Village at Lawachara NP, for example, the mantri responded to proposed livelihood activities by pointedly requesting that the project team find ways to ensure the privacy and respect of community members in the face of uninvited tourist intrusions into the village. Accordingly, the project team worked with the mantri to install protective gates and signs that would instruct wandering tourists of areas within the village to be avoided for privacy reasons.

This simple bamboo fence is being maintained by the Khasia community within Lawachara National Park, dividing a publically accessible walking trail from the plantation areas in which betel vines are cultivated. [Philip J. DeCosse]

Federations of the poor as a vehicle for empowerment

The Project team approach to empowerment of the poor also emphasized formation of federations of poor groups. The federation approach developed by RDRS had been widely considered successful in empowering communities in northwest Bangladesh. Under Nishorgo, Forest Resource User Groups (FRUGs) would be formed from low income households and gradually federated into bodies that could speak on behalf of the larger group.

The Management of Aquatic Ecosystems through Community Husbandry (MACH) project

had federated (using a different approach) its Resource User Groups (RUGs) into organizations that are legally registered and operate revolving funds for enterprise and livelihood development (Federations of RUGs). This was based on a common membership of poor wetland users and aimed at diversifying incomes and helping members move out of fishing. But MACH, having helped poor wetland users organize on economic grounds, also required that RUG members and other poor be a majority in the membership of broader Resource Management Organizations (RMOs) created to ensure sustainable use and restoration of specific areas of wetland. This was done with the aim of advancing a "pro-poor" attitude among the range of fishers, farmers, and local opinion leaders who formed the RMOs (note that the RMO membership is from direct wetland-using villages and has limited diversity – they do not include as members, for example, UP members or businessmen). Since most households living around wetlands make some use of fish and other wetland products, a common interest in sustainable use and conservation could be developed, when it was shown to restore productivity over degraded levels.

But at Nishorgo sites, although the Groups were defined as forest resource users, their actual interest in forest PA conservation was much more diluted and diffused than the MACH RMO interest in fisheries. The Nishorgo FRUGs, like the MACH RUGs, were ultimately and primarily interested in livelihood opportunities from any source, whether or not the forest was conserved or would help generate that opportunity. And since the forest PA does not provide extensive direct livelihood opportunities, the Nishorgo FRUG had little direct stake in forest PA conservation. Rather, they were in effect just groupings of poor who happened to live near a given PA. This disconnect between the FRUGs of Nishorgo and their need or desire for PA conservation posed a fundamental obstacle to creation of strong federated bodies.

As Nishorgo progressed, the team worked to shift the focus to those FRUGs that were directly involved in patrolling, and those that would be able to directly benefit from forest conservation (e.g., through social forestry opportunities, participation in silvicultural operations, participation in tourism enterprises, etc.).

Income and social status differences among co-management organization members

The vast disparity of income levels and social status of members within the CMOs itself dampened the process of empowerment by disadvantaged groups. Including opinion leaders such as UP chairmen, professors, and businessmen within the CMOs reduced the likelihood that members of lower social standing could make their voices heard. Even with strong project facilitation it was difficult to persuade anyone other than these élite persons to speak up at CMO meetings. Although the status and the confidence of federation leaders increased over time, these leaders still played a secondary role compared with more prominent actors. Slowly, more and more members of the CMOs have become willing to speak up at meetings. But a modification in the governance framework would be necessary to ensure that the voice of the disadvantaged is heard within the governing framework. A new body representing only the interests of the poor may be considered as part of the governance framework of PAs.[2]

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[2]   Subsequent to the drafting of this chapter, a new co-management Government Order has been released that does include a "People's Forum" in response precisely to this issue.

Perceived acceptability of corruption

The co-management approach requires transparency in decision-making, and the Nishorgo team took steps to ensure such transparency through such actions as open annual planning, public meetings, and published financial reports. The team assumed that if participating stakeholders were made aware of improper behavior, then some social pressure would be brought to bear upon the instigators, and behavior of those instigators within the local community would change. The process as it developed at Nishorgo sites did indeed increase the amount of information concerning the improper behavior of stakeholders from the area, including in many cases from members of the CMO itself. The team learned over time, however, that it had overestimated the extent of such social pressure and its ability to change behavior. In effect, the team miscalculated the acceptability of corruption and misbehavior at this local level. It was fitting therefore, that the CMO assessment (Khan et al., 2008) should recommend development of clear reward and punishment systems within the social structure of the CMOs.

Lessons Learned

A number of lessons have emerged in this area of empowerment.

The co-management governance structure that developed under Nishorgo has not sufficiently encouraged active participation of the marginalized. While the concerted effort of the implementing team and the introduction of complementary activities did enhance the role of women, minorities, and the poor, their ability to take up this opportunity was limited by the context of current social norms and CMO structure. Changes are needed so that these voices are more easily heard. To this end, future co-management efforts would benefit from a complementary institution at PA level explicitly designed to encourage open expression of ideas by the marginalized.

Without explicit attention to clarifying land and non-land rights of indigenous minority Forest Villagers, their active participation in co-management will not be secure. While the discussion of land rights can and will continue between minorities and the Government, we believe that important clarification of other rights can be undertaken at the same time for Forest Villagers. Rights may be formalized, for example, for ethnic minorities to take part in benefiting from planned forest thinning operations, or enrichment plantation activities, or opportunities for capitalizing on nature tourism within the PA.

Without a fundamental shift in the perspective and bureaucratic incentives of local FD staff, it is not realistic to expect a rapid process of empowerment. An important explanation for the delay in active governance by the local stakeholders derives from passive or even counterproductive interventions by DFOs, ACFs, and Range Officers. DeCosse and Huda (2005) noted the pre-eminent role played by the Forest Department in the eyes of local poor stakeholders, and that the views of other local stakeholders around the pilot PAs could be characterized as: "If the FD acts correctly, the forest will be saved. If it acts badly, forest will be lost." The corollary to this belief, they noted, was both the power of the FD in the local arena, and the lack of belief that local people could truly influence forest conservation. The co-management process being supported is slowly leading to greater opportunities for the

marginalized to take power and authority in PA management, but in the context of Bangladesh, it will not systematically occur until and unless the local FD staff provides its support to the process.

The governance structures and composition that best empower local marginalized stakeholders should be allowed to differ between PAs. The "one-size-fits-all" governance approach tested at Nishorgo sites needs to be made more flexible in future co-management efforts. Differences in the social and economic context around each PA (scale, social diversity, economic pressures, etc.) necessitate a framework that enables an adaptive approach whereby specific socio-economic and biophysical characteristics are taken on board when developing specific governance structures and processes.

Conclusion

The Nishorgo project responded to pressing needs at pilot sites in 2004 with the creation of a co-management governance structure that includes membership from many categories of stakeholders around the PAs. At the time, this inclusiveness was believed necessary to stem the principal conservation challenge: constant and steady illegal extraction of timber products from the PAs. While this degree of inclusiveness may have been effective at spreading awareness of Nishorgo and its objectives, and in encouraging participation of many stakeholder groups, the voices and active participation of marginalized groups was compromised in the process. Within a year of formation of the eight CMOs it was clear that the voices of women, and the poor in particular, were muted by comparison with their numbers. The Nishorgo team has taken steps to redress the effective exclusion of poor woman and ethnic minorities. Continued efforts need to be made in this regard at present and future co-management sites.

More generally, the pace at which the CMOs became active in demanding to exercise the rights they gained on paper in the GO and management plans was slower than expected. This hesitancy stemmed from: lack of supportive roles by some FD officers, a desire to have all rights explicitly stated and written, a lack of belief that the status quo could change, and the vested interests of some CMO members.

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6

Assessing the Capacity and Progress of Forest Co-Management Organizations

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The crucial role and significance of institutions and the associated surrounding contexts in consolidating and furthering forest co-management initiatives are now unequivocally established (for some pioneering arguments, see, for example, Borrini-Feyerabend, 2004; Kothari, *et al.,* 1998). This chapter reports on the lessons and experience of a comprehensive study that attempted to examine the performance and viability of Co-Management Organizations (CMOs) as "local institutions" against selected indicators of sustainability and organizational development. In this chapter we broaden the mainstream of research and define the term "institutions" as including both the complex of norms and behaviors that persist over time by serving collectively valued purposes, and the organizations and bodies that establish those norms and in which they are embedded[1]. The study upon which this chapter was based[2] was commissioned and fielded by the Bangladesh Forest Department (FD) under the auspices of its Nishorgo Support Project. The detailed study proceedings and findings are available in Khan *et al.* (2008).

We reviewed the rationale for, and the critical necessity of studying institutions as a means and channel of development elsewhere (Khan, 2008). Suffice it to note here that the key literature on co-management and community-based management suggest the following ways in which co-management bodies can relate to rural development and community empowerment (excluding, of course, their role in natural resource management, which is not considered here):

(i)   Planning and goal setting for any deliberate attempt towards rural development and transformation
(ii)   Resource mobilization
(iii) Provision of networks and services to local communities
(iv)   Integration and coordination of varied services to ensure that target groups receive these services in right quantities and at the right time
(v)   Keeping a check on rural administration and service delivery agencies and forcing such accountability
(vi)   Articulating local demands and interests

Besides the above general utilities, in the context of the Nishorgo project, local CMOs are particularly important for three simple but crucial reasons. First, such bodies may provide

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[1]   For a compilation and analysis of the relevant conceptual connotations see Khan (2008).
[2]   The senior management of NSP had been considering the idea of conducting an assessment of CMOs' performance for several months prior to commissioning the study. This study design was developed in response to NSP in-house discussions as conveyed to the study Team Leader by the NSP, Project Director and Chief of Party.

an avenue for training, orientation, and public awareness-raising activities for the targeted communities. Secondly, these can act as a platform for articulation of the communities' voice and demand on issues critical for survival. Thirdly, an active and vibrant village institution can also contribute to the broader process of socio-political empowerment among the respective communities[3]. Despite these potential benefits of institution building, there has been strikingly limited research on the institutional arrangements related to participation and co-management in Bangladesh forests.

The remainder of this chapter is organized into a number of interrelated sections. The next section sets out the conceptual and methodological considerations of the research together, with a description of the key steps and processes involved the conducting the study. The third section elicits and summarizes the key lessons of the study – drawing on the overall observations and experiences of the fieldwork. In line with the format of the conceptual framework ("ecology-entity"), the analysis was pursued at two complementary levels. Firstly, the ecological level – exploring the suitability and conduciveness of the broader contextual factors for the promotion and facilitation of collective action and performance of CMOs and the co-management approach. Secondly, the entity level – investigating selected key factors and dynamics concerning the organization of CMOs and the associated surrounding local communities. The concluding section recapitulates the key arguments of the study, and exhorts increased research on this relatively less-explored subject.

The Study: Key Steps, Conceptual Framework and Methodological Considerations

The key steps, phases, and activities of the study included the following:

Identification and fielding of the study team: The Nishorgo project had considerable in-house experience and expertise of working with CMOs and conducting some form of periodic participatory assessments of their performance. The Study Team Leader was hired to complement the project's in-house team by bringing in broad-based experience and providing general guidance to the assessment exercise. The study team members represented such diverse academic disciplines as natural resource management, sociology, anthropology, forestry/environment, zoology, and development studies. Each member was reasonably familiar with the major issues and challenges of the study, and possessed an intimate knowledge of the concerned project field sites, their socio-geographical peculiarities and cultures.

Initial Secondary Review and Stakeholder Consultation: A thorough review of the relevant literature was made and circulated as a secondary review report (Khan 2008). As a part of the orientation and piloting exercise, the study team held informal discussions with a cross-section of key stakeholders including the concerned project and FD staff in Dhaka and various project sites, local/partner NGO activists, academics/researchers, and relevant government staff (e.g. concerned Upazila Nirbahi Officers). An inception meeting was also held at the FD headquarters.

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[3] Although the CMOs are not village-based, to function effectively they require that common interests of villages represented in a CMO are articulated.

Formulation of a Conceptual Framework (Assessment Tool): The study draws on the Conceptual Framework that was developed, discussed, and endorsed prior to the fielding of the team. The framework argues that capacity and performance are regulated and affected by a number of complex issues and dynamics that may be explored at two interrelated levels: (i) at the broader environmental level (what we call the "ecology"; (ii) at the more immediate level of the organization under the study (particular CMO) and associated (participating or targeted) community; we refer to this level as the "entity".

The ecology is primarily concerned with the broader context and dynamics that have a bearing on collective action and institutional development for co-management. In other words, here we address and explore the conduciveness of the broader contextual factors for the promotion and facilitation of collective action and development of local co-management bodies and institutions. At the entity level, we examine such factors as the extent of organizational development (within the CMOs), leadership development, formation and nurturing of capital assets (human, financial and social), development of self reliance, soundness in the conduct of routine tasks and operations, women and gender development, participatory planning, and networking and relations with relevant agencies/organizations.

The framework went through a rigorous validation process. It was discussed several times amongst the relevant project and FD staff, shared with USAID, and received formal comments from the senior management of the project and the FD. The first round of revisions was made following these consultations. Subsequently, the framework was field-tested in Chunati WS, and based on feedback, further revised and finalized for wider application. It may be noted, however, that the framework is essentially flexible, and meant to be periodically assessed for validity, and revised/modified in response to particular contextual demand and situation.

Empirical Investigation: During a concentrated period of May-July 2008, three days were spent with each of eight CMOs. This field investigation involved the following tasks:

(i)   One-on-one interviews with key actors including the respective Upazila Nirbahi Officers, chairpersons of CMOs, local social or political elites, and the concerned Divisional Forest Officers
(ii)   Exclusive Focus Group Discussions (FGDs) with CMO members (men separate from women), local FD staff, local project staff, and others
(iii) Community workshops with villagers from various walks of life (who are not directly involved in (or participants of) the project
(iv)   Field visits to selected Landscape Development Fund (LDF) projects
(v)   Daily progress review and trouble shooting meetings amongst the team members and associated staff

Cutting across the above tasks was the tool of uncontrolled ethnographic observation. The team maintained field diaries to record virtually any observed phenomenon of interest. To

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4   The conceptual framework is set out in Khan (2008); moreover, eight detailed site-specific reports – one for each CMO – were prepared that set out the background, context, methodological approach, and rationale of the study.

the extent possible, efforts (such as use of local dialect/language during interactions, fixing time and venue of meetings according to the respondents' convenience, informal gestures by the team, personalized attention to relatively "weaker" sections of women and marginalized or very poor members of CMOs and villagers) were made to provide the respondents with a flexible and relaxed atmosphere to vent their emotions and ideas in ways they preferred without being interrupted, guided or directed. Particular attention was given to observe the facial and body language of the respondents, along with the general features of the locality.

Debriefing and Feedback: A number of consultative and debriefing meetings were held during the course of the fieldwork at the site and divisional levels. A central staff debriefing meeting-cum-final sharing workshop was held on September 2, 2008 at the FD Headquarters in Dhaka. This event was participated by the top FD and project management, and attempted to provide the participants with a summary of the major findings and lessons of the study, and to share ideas for future action and further improvement. The team's observations and recommendations were generally well received and validated by the participants. This chapter reflects the feedback and opinions expressed in the workshop, together with the written comments received from other senior staff.

However, there were limitations to the study. The exercise was essentially "exploratory" in nature. It makes no claim of being exhaustive in its treatment of all the complex dynamics of the operation and efficacy of CMOs, or generating findings that may qualify for broad-based generalizations. Instead, the study's main aim has been to initially examine the issues affecting the functioning of CMOs and their surrounding socio-cultural and political contexts – in large part highlighting areas where information is most thin, and eliciting broad lessons, as well as pointing to some practical clues for improving the situation.

Lesson Learned

Based on the overall experience of the study and assessment exercise, a number of lessons can be identified. Following, the key lessons are discussed in line with the conceptual framework of study.

Lessons learned at the "Ecology" level

It is imperative to engage with local leadership organizations—both traditional Samaj and local government (especially Union Parishad)-based mechanisms – for successful functioning of CMOs. In areas where existing local institutions function relatively well, and the respective CMOs have made it a conscious policy to work closely with these institutions, results have been encouraging.

It is strategically wise, if not always "noble and brave," for CMOs to avoid any major confrontation or clash with the powerful social and political forces in their locality. In other words, an incremental and palliative approach, rather than radical encounters, serves the purposes of co-management better.

Relative homogeneity of social and demographic composition of the locality makes the exercise of CMOs' leadership authority and implementation of decisions easier. This matches

with the findings and "design principles" for collective action in other studies (for example, Ostrom 1990; Wade 1988).

Shared experiences between CMOs can help in understanding different approaches. Here, a woman involved in co-managing the Boxa Tiger Reserve in India shares observations with a delegation from Bangladesh.
[Philip J. DeCosse]

In areas where some natural resources are still left (to be conserved) and the current depletion rate is alarming, local people show a relatively greater interest in coming to the fold of co-management activities. In such areas, a degree of general agreement amongst the local people of various walks of life is often noticeable regarding the severity of the depletion and degradation process, and the need to arrest and then reverse losses. Most respondents expressed a willingness to try out and participate in any "trustworthy initiative" towards improvement of the situation. Internationally, immediacy and recognition of threats to a community's resource base have been shown to be an incentive for collective action (Ostrom 1990, 1992).

There has to be a recognition, rather than denial or avoidance, on the part of the concerned officials involved in co-management of the historical fact that local people, especially the poor and marginalized communities, have commonly run into conflicts with the government's regulatory forest management regimes. Many local communities in co-managed PAs have a long tradition of living alongside forests. Their historic dependence on forests is also clear and poignant. In the process, gradual scarcity and systematic decrease of the resource base have intensified this conflict. Any attempt or initiative of the government is therefore initially viewed with some degree of suspicion and mistrust. Overcoming and bridging this confidence-gap remains a major challenge for any forest conservation effort.

Co-management activities have a better prospect of public acceptance and grounding in areas where the local people have some earlier exposure to "participatory" projects. In a few project PAs, the participating local communities have had some experience of working with participatory forest management initiatives (for example, several projects in the late 1980s and 1990s involving FD and NGOs that supported community-based nursery-raising enterprises, and social or community forestry by planting trees along roads and other public lands), and this has been to the advantage of CMC operation.

At the sub-national (field) level, the understanding of, and benefits ensuing from, the recent policy and regulatory reforms in the forestry sector are inadequate and marginal. Since the early 1990s, the following reforms have been adopted: promulgation of the National Forest Policy 1994, with a clear emphasis on community-based forest management and public participation; enactment of the Forest Amendment Act 2000; creation and operationalization of a separate Social Forestry Wing in FD; reorganization and ministerial approval of an expanded FD; recruitment of a new batch of Bangladesh Civil Service (Forest) Cadre officers; promulgation of Social Forestry Rules; streamlining of higher level promotions in FD; and

institutionalization of benefit-sharing mechanisms for social forestry projects (see Khan 2004). Unfortunately, however, the team's observations suggest that there has been little corresponding impact or understanding of these national/macro level reforms in the field. Local respondents hardly demonstrated any knowledge of the policy and institutional changes. Even local FD staff are marginally aware of these issues, and many of the respondent FD field staff do not seem to have relevant updated information. Although local FD officers have started to come to terms with the idea of co-management, and engage in limited community level activities, many FD field staff are still preoccupied with regulations, revenue generation, and exclusion or limitation of local uses on FD lands.

Long-term financial sustainability of CMOs calls for careful visionary planning and overcoming of bureaucratic constraints. There has been very limited thinking or effort to build up any developmental fund to sustain CMO operations beyond the project. CMOs and local people often complain of procedural complications and bureaucratic delays in decision making and release of funds (especially in matters of Landscape Development Fund projects) – as accounting for poor performance in implementing projects.

There are a number of legal, procedural, and policy constraints on successful functioning of the CMOs and co-management approach, which need to be urgently addressed. Examples of such constraining issues include the following:

- The CMO structure (including CM Committees and CM Councils) has been formed under the Government Gazette Notification that provides for the establishment of "the co-management model" in five specifically named PAs of Bangladesh. A good number of respondents (especially the field FD staff and CMO leadership) opined that the Notification limits the application of the co-management model to these five PAs, and may pose a legal constraint on future expansion and wider replication of the model.

- There is no specifically developed benefit-sharing contract for buffer plantations. In the absence of a standard format, the current practice is to follow the memorandum of understanding that was used in the Forestry Sector Project. The current arrangement does not provide for addressing the particular contextual situation and field realties of the co-management approach in PAs.

- One major issue concerns the definition, scope and authority regarding projects under the LDF. A CMO (with representation of the FD and endorsement of the Grants Review Committee of the project) has to finalize plans for implementing selected LDF projects inside the "core area" (PA forest land). This move has been opposed by some local FD staff with the argument that the current legislative framework (especially the Forest Act, Wildlife Preservation Order, and National Forest Policy) do not provide for establishment or conduct of any externally funded and implemented project, or operation of any external agency (e.g. CMO) inside the "core area." Currently, there is a stalemate regarding the issue

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[5]   vide MOEF/Parisha-4/Nishorgo-64/(part-4)/112. Dt: 15.05.2006.
[6]   The Grants Review Committee reviews and endorses proposed projects under LDF. Its membership includes the FD Project Director, the project Chief of Party, and the project Grants Coordinator.

in the field – causing serious frustration among CMO members and associated villagers. Thus there is a fundamental lack of understanding and acceptance of co-management in the field, and there are also ambiguities and conflicting interpretations of the definitions of such terms used in the co-management model as "core," "buffer," and "landscape area."

- A concern was raised by some respondents about the fate of "enrichment plantations" implemented under the auspices of a CMO within the "core area." The Bangladesh Wildlife Preservation Order 1973 vide clause 23(3) states: "..any felling inside the park shall not be allowed". In light of this regulation, ambiguity and misunderstandings exist among FD, CMOs, and participating villagers as to whether CMOs would be allowed to ultimately reap benefits from enrichment plantations. Since this planting is for habitat restoration in a PA it is unclear whether CMOs or villagers should befit from "thinning" operations, since those operations may not be appropriate to restoration of forest in a PA.

- Referring to various regulatory frameworks, some mid-level FD staff wondered (and candidly shared with the team) a number of queries that have profound legal and functional implications. These include: Can a CMO as a local institution exist beyond the project period,given that the government Gazette Notification, on which the CMOs primarily draw, is time-bound and limited? What would be the "role" of CMOs: management, decision making or implementer of projects?

Lessons Learned at the "Entity" Level

CMOs (including Councils and Committees) need to ensure greater inclusion and voice of the relatively disadvantaged sections of society (e.g. women, religious and ethnic minorities and poorest of the poor). Currently, a form of negotiated alliance or compromise is noticeable: although CMO membership often includes substantial representation from the local "power circle" – local government leaders and socio-cultural elites – the dominant (powerful) CMO members maintain generally good terms with the relatively powerless and disadvantaged sections, and are open to the idea of wider inclusion of such sections.

One key reflection of vibrancy of CMOs is the frequency and functioning of meetings. In a majority of cases, participation in CMO meetings is enthusiastic. Although the discussions are generally lively, and a good number of members listen and show interest, a few relatively dominant members raise and discuss the salient issues. Most discussions and ensuing decisions in the meetings are transparent, recorded (in the official proceedings), and widely shared. Some reasons for the relatively high participation in CMO meetings include the perceived honor associated with them, an opportunity to interact with the FD staff in a public setting, and the prospect of participating in some local activities that are generally viewed be worthwhile.

Transparency in CMO leadership calls for an institutionalized system of performance evaluation (including a reward and punishment system). Although a formal system of evaluating the performance of formally recognized CMO office holders (President, Vice President, Secretary, Treasurer) is yet to be developed, the respondent general members and common villagers appear to be broadly aware and conscious of the role and activities of these CMO leaders.

The regulatory documents (Co-Management Council and Committee constitutions and government circulars) need to be disseminated to common members and any interested person in the community in a language and manner that is understandable to the local people.

Successful CMO leaders depict a high degree of interpersonal and negotiation skills. However, the application of such qualities is limited.

The social capital associated with CMO membership is widely valued, and remains a major attraction for CMO leaders. Membership in a CMO is viewed as a "prestige position" in the locality, and a way "to get closer to the government."

The FD and government need to do more to convince people of their long-term commitment to the co-management approach. In a good number of sites, local people, even CMO members, did not show a full understanding of the mission or vision of co-management or the basic premise of "conservation." They have considerable doubts and suspicion about the FD/government's "prolonged and continued commitment" to this type of project – especially the level of FD commitment to a transfer of rights, authorities, and responsibilities to CMOs in order to more effectively protect and manage PAs while ensuring increased local benefits.

FD needs to play the crucial role of principal facilitator and nurturer of "co-management" if there is to be any reasonable degree of success of such an approach. The current capacity of the FD to perform this demanding role is limited – especially in terms of staff training and orientation, logistics, and associated knowledge base.

Some quarters of local FD staff share an uncomfortable feeling of losing territorial control and authority in trying to promote co-management. Some even noted that CMOs are overshadowing local FD offices. A more direct and proactive involvement of FD leadership, including the relevant Conservators of Forests and DFOs, may help to dispel such feelings and restore local level confidence in the work.

Women and youth are only cursorily represented in the CMOs.

Women and youth were only cursorily represented in the CMOs [Philip J. DeCosse]

Training and skill enhancement initiatives need to be locally specific, tailor-made to local demand and context. A number of problems, which hinder the effectiveness of training programs, were identified during the course of discussions with the local people and project field staff, including the following: (i) Most recipients of training noted that it is difficult for them to leave their villages to attend training sessions; (ii) Some (mostly women) faced difficulty in following the training presentations, materials and handouts because of their low level of literacy; (iii) The timing of the training

was mainly determined by the project, which sometimes conflicted with the participants' livelihood engagements, especially agricultural work; (iv) Some training courses were not supported/supplemented by practical demonstration and hands-on exercises; (v) In the absence of (or inadequate) refresher or follow-up training, the impact of training, as reported by some respondents, has been somewhat short lived and blurred.

Handling development projects contributes to CMO confidence and skills enhancement. A high degree of interest and enthusiasm was found amongst CMOs and participating local communities as regards taking up development projects. Poorer sections – especially destitute women – are engaged in the implementation phase – providing manual labor and other maintenance inputs.

Local people's sound "popular wisdom," especially in analyzing the performance of development projects (that they/CMO handle), is worth noting and exploring further. The experience and results of various projects handled by CMOs have been mixed. The team visited both successful and failed projects. Local communities, as revealed in the course of community workshops, have sound knowledge of (and are capable of examining) the reasons for relative success and failure (see the following table).

A People's Anatomy of "Successful" and "Failed" Strip Plantation Projects (under LDF)

Positive factors	Negative Factors
Provision of fencing and maintenance	Exclusion of the (often relatively affluent) households or owners/controllers of land adjacent to the road/strip
Full-time supervision and vigilance by participants (based on mutually agreed rotational duties)	No provision for maintenance and monitoring
Participants are all from the locality/ immediate vicinity of the plantation site	Inclusion of participants from other areas (beyond immediate surrounding of the strip plantation site)
Many of the participants own/control pieces of land adjacent to the strip/road	Relatively ineffective Project Implementation Committee
Widespread consultation and distribution of specific responsibilities among participants	

Source: discussions in community workshops over experiences of strip plantations in Sufinagar (Chunati) and Chingi Shah Road (Boro Hatia) sites under the purview of Chunati CMO.

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[7]   The Project Implementation Committee works under the auspices of the CMO, and is primarily responsible for implementation of local small projects.

[8]   The concerned FD staff, however, have a different view on this complaint by the local community. Their interpretation is that LDF project proposals are primarily reviewed and endorsed by the Grants Review Committee, and the communications mentioned in the case were between the Grant Coordinator and the CMO, not directly between FD and CMO. It may be mentioned here that FD is represented in this committee by the PD.

CMOs have potential for serving as platforms for conflict resolution. [Philip J. DeCosse]

The provisions for livelihood enhancement linked with the project are clearly insufficient, and the income generated from those alternative occupations supported falls far below the demand. These provisions are inadequate to make any substantive change in the livelihood status of the recipient households.

Participating women require greater recognition and opportunities to access formal avenues of income and decision making. The opportunities for women's participation in "formal" sectors of paid work and public office premises are still limited. Most women respondents have emphasized the need for more livelihood-related training and skills development opportunities. A limited number of women are engaged in implementation of CMO-managed projects; their participation at the formulation and design stage of such initiatives is, however, insignificant. Women have some access to micro-credit offered by various NGOs. There have been a few reports of misuse or unproductive use of such credit funds, for example, because of the immediate demand of family consumption, drawing credit simultaneously from more than one source, and transferring the fund to male members of their families. The poorer women admitted to still entering the local forests (PAs) – but noted that they have done so less frequently in recent months compared to the time prior to the launch of the project.

Locally based planning exercises contribute to CMO and local community empowerment and confidence building, but require constant central support. Currently, the process of planning at the CMO level essentially follows a "bottom-up" approach, where the planning exercise is done involving the relevant local communities, and the level of participation in such interactions is reported to be generally good. The funding decisions are, however, ultimately made centrally. This is seen, as one CMO leader commented, only as a "partial [or] half-hearted trust by FD on local people and CMO." Although there is FD involvement in the planning conducted by CMOs, the team noted cases where FD staff subsequently "disowned" the decisions taken in such CMO planning meetings. A number of projects that were planned by CMOs (and endorsed by the project and the FD centrally) currently remain unimplemented – due to objections by local FD staff on grounds of legal and procedural complications. This stalemate seems to frustrate the basic spirit of the co-management approach. Here is a comment by a key member of a CMO in the southern region:

> The Range Officer and Beat Officer both were present when we planned all these LDF activities. We followed the guideline, completed all paper work, … there were several back and forth correspondences between us and them in Dhaka; … we were asked to revise the budget – which we did. Then after long waiting, we heard that the PD has approved our projects. … Meanwhile, local people keep enquiring to us – 'what happened to our plans?' 'when can we start the projects?' We have no answer, but to say: 'wait – things are taking shape'. … Now finally, the Range Officer tells us that you cannot implement

the project. Is this for fun? Where has 'co-management' gone? … You are a 'big' professor [pointing to the team leader], you tell us - how do we save our face now in front of all these [local] people?

CMOs have potential for serving as effective platforms for local conflict resolution and peace building. A good number of CMO members take part in local conflict resolution processes and mechanisms. This serves as an added advantage in the functioning of CMOs. The CMO leadership is, however, not very enthusiastic about playing an active role in the settlement or negotiation of various conflicts between the FD and local communities. The common "apples of discord" include: encroachments (and resultant lawsuits), boundary demarcation, and activities related to (forest) land use conversion (e.g. betel-leaf cultivation, pond excavation and aquaculture, establishment of brick kilns). While the

CMO play a critical role in gauging the needs of the marginalized for drawing sustenance from the PA, and advocating on their behalf. [Philip J. DeCosse]

FD expects and insists on a more proactive role of CMOs in matters of conflict resolution, the CMOs argue that there has been a tacit and commonly understood agreement among the local people that they would cooperate in these "new conservations projects (including the Nishorgo project) of the government"–provided the FD does not get back to its "old enmity and pursuits" and there is "a status-quo between the FD and local communities" during the project period. One typical comment by a CMO leader astutely made the point:

> We have to live with these people. They expect us to uphold their interest – which is not always in line with the FD's interest. FD officials are not permanent here – they will come and go; but we are here for good. What would happen to us if people see us as *dalal* (collaborators) or *gaddar* (betrayer of trust)?

CMO leaders therefore consider any direct involvement in these matters may make a CMO unpopular, and jeopardize other activities run and managed by the CMO–risks that they clearly want to avoid.

Although formal Co-Management Council and Committee "constitutions" exist, actual knowledge and understanding of the document is marginal amongst most of the observed CMOs and communities. This remains a constraint on forging a shared purpose and common vision in CMO operation.

Clear tenurial status and documentation go a long way towards ensuring community

participation, and building better FD-community relations. Although some tenure agreements – especially relating to strip plantations – are considered generally clear and fair, not all such agreements are fully understood by the participating communities. The agreement documents are not uniform, and various forms are used.

Epilogue

Of late, the need to understand institutions and their broader contexts has moved center stage in our pursuit of establishing appropriate forest co-management structures and processes in Bangladesh. The lessons identified and discussed above, which emanate from a rigorous study of the functioning of the few CMOs in the country, are worth keeping in mind while designing and implementing co-management programs. These hard-earned observations may illuminate the process of wider natural resource management policy and practice in the country and beyond.

Currently, however, there is not much of an effort by way of systematically examining the performance and capacity of forest PA co-management institutions and associated "ecology," and benefiting from the lessons learned. This important area of study deserves immediate attention from both development practitioners and academia – as at present our knowledge on the subject is at best marginal.

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Management Plans and Restoration of Protected Areas

Ram A. Sharma

Co-Management plans for each pilot Protected Area (PA) supported by Nishorgo Support Project (NSP) were not originally planned to be developed. However, soon it became clear that the Forest Department (FD) was very keen to have detailed management plans for all five pilot PAs, and that there was a lack of experience in developing and implementing appropriate plans for PAs since the FD focused on plantations. None of these five PAs had an approved management plan, so it was agreed that preparing plans would form a good foundation for future management.

The PA Management Specialist's first task was to develop and apply a process for preparing comprehensive management plans in consultation with FD staff and local stakeholders. In the absence of any standard format of management plan for PAs in Bangladesh, an exhaustive review was made of management plans prepared for PAs elsewhere in South Asia. A format with possible contents required for a landscape approach to participatory management planning was developed, discussed, and finalized with FD senior staff. However, the process needed to be informed by and take account of the pressures and expectations within the FD generated through past decades of work and projects.

These biases can be summarized as a commonly held view of PA management in the FD that: "You need to give us some plantations, because this is what we do." The FD traditionally has seen its professional development and benefits come from managing plantations: felling and planting new plantations. Nishorgo has worked to extend this focus to include ecosystem and habitat management in the broader landscapes in which PAs are found. In the past five years, efforts have been made to extend this vision and ensure its practice throughout the Nishorgo sites.

Participatory plantations were undertaken by the FD, mainly under large donor-funded projects since 1981, when community forestry was taken up in Northern Bangladesh with financial assistance from the Asian Development Bank. Participatory Benefit Sharing Agreements (PBSAs) were signed with individual families who were locally selected by a committee chaired by the Upazilla Nirbahi Officer. Such plantations have since continued under different forestry projects both on forest land and other public (*khas*) land (e.g. Coastal Greenbelt Project, Forestry Sector Project). Although the FD has successfully raised participatory plantations on a large scale, the main focus of such efforts has been on unutilized *khas* lands (mainly strip plantations along roads and railway lines, and coastal plantations along sea coasts). Woodlots and agro-forestry were mainly concentrated on forest land devoid of tree growth that had been encroached by settlers although formally under FD jurisdiction; thus, participation was a way for the FD to regain an effective role in decision-making over this land and a way of restoring trees.

Following donor emphasis on social forestry on non-forest land, the natural forests suffered and continued to be degraded due mainly to lack of management and investment.

The Government of Bangladesh was required to contribute matching funds for using donor assistance, so significant funds were diverted to establish plantations on unutilized public land. This drastically reduced fund allocations for normal forest management functions, including raising seedlings of indigenous tree species, and the protection and management of existing natural forests including PAs.

Against the background of a forestry sector characterized by a misplaced emphasis on block plantations, NSP's goal was biodiversity conservation achieved through effective involvement of local stakeholders as partners. Of the six main objectives of the NSP, two focused on biophysical activities in and around PAs and led by FD field staff. A Reimbursable Project Aid (RPA) component, to be implemented by the FD, as detailed through a Development Project Proforma (DPP), was later added when funding from the US Department of Agriculture was provided. In addition to the development of facilities in PAs (Chapter 23), habitat restoration in the five pilot PAs was an important component of the PA development programs. The main activities for habitat restoration included in-situ forest regeneration, waterbody development, and aided regeneration (mainly by raising buffer and enrichment plantations).

Exotic teak plantation inside the Chunati Wildlife Sanctuary, 2003. [Philip J. DeCosse]

Creating plantations on vacant forest land was expected by FD. A missing element in the initial approach was habitat restoration to be achieved through natural regeneration (e.g. seeding from mother trees, recovering regenerative rootstock, protecting naturally occurring seedlings through joint community patrolling, and encouraging coppicing from existing trees in forest areas having tree species that can be coppiced (such as Teak and Sal). In view of the limited funds for plantations it was soon realized that less expensive natural regeneration technologies would be more appropriate under NSP.

Starting Assumptions and Subsequent Adaptation

Participatory planning to develop management plans was undertaken in the five pilot PAs. Five management plans were finalized after consulting stakeholders. These were later approved by the Ministry of Environment and Forests (MoEF), and were a major improvement over the former management/working plans that emphasized restoring forests through extensive reforestation using block plantations (planting 2,500 seedlings/ha of fast growing tree species of commercial importance). In the new PA management plans, the focus was shifted from raising expensive and ecologically inappropriate large-scale plantations to the restoration of degraded habitats, mainly through low-cost natural regeneration technology wherever suitable, to be complemented in places by aided regeneration appropriate to site requirements.

The main long-term management aim agreed in the plans is restoration and maintenance of the landscape and the constituent biodiversity of the degraded forests in the PAs to the

best possible condition. Specifically, the following key objectives were agreed to be achieved during implementation of these five year plans:

- To protect and conserve the PA forest landscape by gainfully associating key stakeholders, including the members of the existing Co-Management Committees (CMCs), community patrol groups (CPGs), and Forest User Groups (FUGs).

- To restore degraded forests mainly by encouraging natural regeneration but supplemented by aided regeneration of indigenous species in identified gaps.

A new forest landscape restoration strategy was, therefore, developed in consultation with FD field staff and other stakeholders. Effective protection of each PA's forests and constituent biodiversity in the core zone (within boundaries of declared PA) and interface landscape zone (fixed distance immediately surrounding PA boundaries) against illicit felling, forest fires, and forest grazing was found necessary for forest landscape restoration. Restoration activities in the degraded forest areas were intended to complement the protection efforts by recreating suitable habitat for wildlife. The CMCs were tasked to protect these forests by gainfully associating key stakeholders including the members of CPGs and FUGs.

The PAs located in the country's hill forests are within one of the wettest regions in the country and humidity is high throughout the year. These forests benefit from heavy dew during winter when rainfall is low and condensation helps create a micro-climate that is relatively moist throughout the year compared with the rest of the country. High rainfall and rich forest soils provide the preconditions for rapid natural regeneration from existing rootstock, coppiced trees, and natural seeding from standing mother trees. This could be enhanced through joint community protection by FD field staff and CPGs. In identified gaps where adequate natural regeneration was not coming up well, aided regeneration of indigenous species was planned.

An appropriate forest landscape restoration strategy for the pilot PAs, therefore, comprised the following key elements:

- Protecting and conserving all the remaining forests and constituent biodiversity by co-managing the PAs

- Protecting and establishing natural regeneration by encouraging recovery of coppiced trees and seed dispersal from mother trees, and tending regeneration of saplings from existing rootstocks

- Restoring degraded forests by raising and protecting enrichment and buffer plantations of native forest trees in identified areas of the core and landscape zones

- Promoting tree growing in homesteads and on unutilized *khas* lands (e.g. strip plantations along Union Parishad roads) in the landscape zone

- Improving the lives of local poor stakeholders through participatory forest use, other land-based alternative income generation activities, and safe drinking water provisions as an incentive for reducing pressure on PA forests and actively protecting them

While it took some time for the MoEF to issue letters formally approving the management plans, preparatory steps were taken by FD in consultation with NSP for carrying out habitat restoration works based on the recommendations made in the respective management plans. For example, a new activity of Teak coppice regeneration was included for those forests where illicit felling of teak plantations had taken place. In contrast to earlier emphasis on raising block plantations by clear felling existing ground flora, enhanced targets for enrichment planting were included in order to address the degraded habitats that could be restored by planting in identified gaps. Similarly, water body development works were taken up by re-excavating existing ditches and ponds that had silted up, and with provisions for maintaining existing *charas* (streams) and ponds for the use of wildlife and local people.
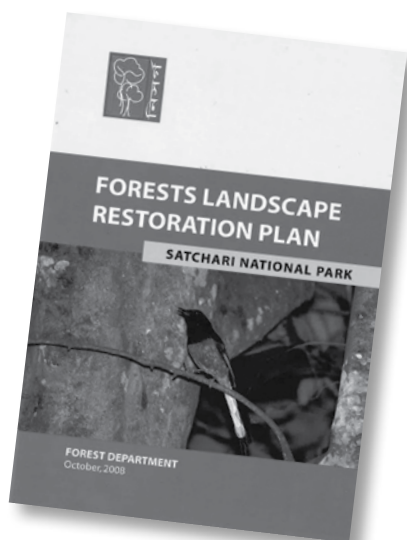
Lessons Learned

Important lessons have been learned from the process of developing management plans and three years of implementing habitat restoration activities. The following lessons are expected to inform the FD field staff and the CMCs who will continue to update and implement management plans and associated habitat restoration activities.

Planning

Linking annual development plans with management plans helps empower and develop skills of the Co-Management Committees. Five-year management plans provide a framework, but resource management and fund allocation for FD field staff and practical relevance for other CMC members are greatly aided by the CMCs developing PA-specific annual development plans within the framework of approved management plans. This process has been successfully implemented for three years, whereby integrated annual development plans are developed by CMCs for planned activities that are undertaken (with NSP support) by FD, CMC, and project staff. This process has indeed empowered CMCs, particularly by giving them a role in works that have in the past been planned and implemented exclusively by FD.

Forest habitat restoration plans were prepared for each of the five pilot PA.

Advance site identification for plantations aids in proper regeneration of degraded forest areas. Depending upon biophysical and socio-economic attributes, suitable sites for establishing different types of plantations need to be identified in advance and in consultation with CMCs and other local stakeholders. Although such planting sites have been identified under NSP for the five pilot PAs for implementing forest restoration activities for five years, this exercise needs to be repeated in other forest areas in general and PAs in particular, but this will depend on establishing co-management bodies first for those areas.

PA forest management

Clear felling and burning should not be allowed in PAs (or other remaining native forest areas). The current practice of clear felling and burning of existing vegetation before raising plantations should be stopped herewith in view of biodiversity loss associated with such practices. In place of clear felling, limited "spot" cleaning of undergrowth where it would choke planted or naturally regenerating saplings within a radius of 1 m can be taken up, particularly in hill forest lands that have high rainfall resulting in the rapid growth of ground flora. Frequent weeding and cleaning operations are required to enable rapid establishment of free planted seedlings and naturally occurring regeneration.

Joint community patrolling should be implemented for all PAs by the Forest Department. Given the FD's lack of resources and intense biotic pressure on forests that are surrounded by dense populations of both humans and cattle, effective protection against illicit felling, forest fires, and forest grazing has increasingly become the peoples' function in Bangladesh. Joint community patrolling by involving the members of CPGs and FUGs under the supervision FD field staff, as demonstrated in the pilot PAs, should be mainstreamed through wider adoption of co-management in other forests and by following the community patrolling guidelines.

Land cleared and burned in preparation for plantation, west side of Teknaf Wildlife Sanctuary, early 2004. [Joe Mellott]

Proper management is required for good and healthy natural regeneration of native trees. Bangladesh's climate and soils result in good natural regeneration. However, natural regrowth does not get established–due mainly to human pressure. Joint community patrolling would protect natural regeneration, but to improve growth requires suitable silvicultural measures, such as cleaning climbers from naturally occurring saplings (see above). To encourage coppice regeneration of species such as Teak and Sal into mature trees, old, high, and malformed stumps, and mis-shapen coppice shoots can be pruned once CPGs and FUGs are oriented in these practices to provide an income from the byproducts. For example, reducing coppice regeneration to 2-3 shoots per stool should be done during the second year for the regenerating coppice stumps. More importantly, there is a risk that large dead trees will be removed, resulting in loss of a vital component of forest habitat (supporting significant invertebrate and bird fauna including hornbills, which are key dispersal agents of forest tree seeds). Proper monitoring and protection is required to keep track of the number of dead and dying trees so that an adequate number are retained for wildlife.

Management of bamboo clumps is required so that the natural regeneration of slow growing tree species is not hampered. Bamboo as a primary species of plant succession comes up naturally in many PAs, particularly in degraded sites such as Chunati, which is affected by

illicit felling and forest fires. Given protection through existing CPGs, regenerating bamboo areas are expected to develop over a period of time. Stands of mature bamboo provide a valuable wildlife habitat in themselves, but may hamper and/or overtop natural regeneration of indigenous forest tree species that are generally slower growing. Where forest canopy cover is incomplete and management plans aim to restore canopy cover in an area, more intensive management of bamboo will be necessary. In such areas limited usufruct rights could be allocated to CPG and FUG members who would earn some income from selective harvesting of mature bamboo to permit forest regrowth. However, it is important that sufficient bamboo habitat is maintained rather than clearing an area, and that best practices are adopted, for example, old bamboo culms should be removed starting from the centre (not from the periphery) of a mature clump and working outward over three years.

Sunkhola (grasses) in the landscape at Chunati Wildlife Sanctuary. [Nishorgo Support Project]

Management of sunkholas is important in order to prevent forest degradation. Sunkholas (sungrasses) are patches of grasslands, found in almost all the PAs where forest has been lost. These are still beneficial to local people who collect grasses mainly for thatching material; they also have some benefits for wildlife as they provide more edges, but this usually has limited benefit for forest-specialist species and more for generalist species. Over-exploitation of *sunkholas* is resulting in loss of grasslands and severe degradation of land due mainly to fires that are repeatedly lit by villagers for sprouting new grasses. Rotational cutting of grasses on a less frequent cycle that is regulated through CMCs and employs existing CPGs would help to regain the vitality of degraded *sunkholas*. In addition, plans can include converting more extensive areas of grass back to forest, and in other public lands within the landscape assisting communities to raise whichever grasses and herbs are agreed to have the highest value for those communities

Plantations

Before taking up tree planting to restore habitat, it is important that the main factors for forest degradation and past failures of plantations are ascertained and addressed in advance. In order to ensure the success of forest restoration, the causes of past failures need to be removed by taking measures to prevent illicit felling, forest fires, and grazing. Where there are existing on-site seed sources and rootstocks, the protection of forest lands for at least one year is expected to result in natural regeneration – which needs to be retained as part of future growth. In degraded areas a quick visual estimate of natural regeneration status by FD field staff may identify areas that are not regenerating, and in these, full planting activities (at 2,500 seedlings/ ha) are appropriate, while in other areas with partial forest recovery enrichment planting (625 or 1,250 seedlings/ha) is appropriate.

For participatory plantations (e.g. buffer plantations and strip plantations), timely and

advance selection by CMCs of appropriate participants from neighboring villages is vital. Preferably, the beneficiaries should be identified from the existing CPGs that are active in the protection of nearby forests.

In view of the renewed focus on biodiversity conservation, the old concept of developing and maintaining central nurseries in each forest division should be revived. This is necessary to ensure a regular supply of seedlings of indigenous tree species, because planting these slower growing tree species requires at least one year old seedlings.

Planting needs to be done along contour lines in undulating terrain. As most of the PAs are located on hilly terrain, it is important that the planting pits are dug during April-May along contour lines in order to retain moisture and check soil erosion. This should also improve moisture retention resulting in the recovery of existing rootstock.

Water bodies

Management of water bodies to meet the needs of biodiversity and local people. Plantations have generally been raised and managed by FD field staff without consideration of existing water courses and water bodies that dot the landscape of many Pas, particularly in undulating terrain. Water bodies are important not only for the conservation of soil and water but also for meeting water needs of wildlife and local people. Plantations of riparian species along streams should not be harvested in view of their positive role in water and soil conservation arising as a result of strong water-tree linkages. A list of existing water bodies along with the details of nearby villages and the wildlife using them for drinking water should be maintained by the CMCs. Where water bodies are silted up, restoration and maintenance (e.g. desiltation, cleaning, bunding) should be taken up by involving local people. Stakeholders' participation may be ensured through rights over riparian trees and fish, and by raising vegetables and other economically valuable plants along and around existing water bodies.

Records and monitoring

Plantation journals need to be well maintained. Planting details should be entered into a plantation journal to be maintained at the offices of the concerned Range and CMC. Traditionally, this has been the responsibility of the FD. However, the CMOs should also be held accountable as part of their direct role in conservation management. Community Patrol Group members, together with FD field staff, should regularly present the status, technical and financial details of replanting in their monthly meetings.

There is a strong need for a robust monitoring mechanism to ensure success of plantations. Each CMO has a Monitoring Sub-Committee that should exclusively be made responsible for plantation monitoring. The quality of seedlings should be ensured to begin with, followed by stacking and pitting along contour lines. For easy monitoring, planting should be done in blocks of about 4 ha each. Two months after planting, the survival and growth of seedlings should be assessed by the Monitoring Sub-Committee and recorded in the plantation journal. In case of mortality, soil preparation operations, done along with the first/second weeding, shall be monitored for ensuring quality seedlings and future survival.

Monitoring should continue for several years, with adjustments in planting practice as required. Based on sound field inventory methods, the survival of planted seedlings (along with upcoming natural regeneration) and plantation area details should be recorded annually for the first three years after planting. For instance, a few circular sample plots of 0.01 ha (equivalent to a circle with a 5.64 m radius) can be marked in each 4 ha planting block. Mid-course corrections will be made and responsibility fixed based on the results of monitoring. A final assessment will be done at the end of the third year when the plantations will be treated as established (against mortality factors such as grazing and water stress). However, as timber value increases over the years, joint patrolling will need to be further strengthened against illicit felling and forest fires.

Conclusion

Despite socio-technological constraints that hinder restoration of native trees in forest PAs and optimal productivity, leading to a regular flow of socio-economic benefits to local communities in participatory landscape afforestation, edaphic and climatic conditions in forest lands and PAs of course favor tree growth. Forest can be restored by proper planning and implementation of technical and managerial measures identified through the pilot experience.

Nevertheless, the FD has not mainstreamed these forest regeneration and ecosystem approaches. This will require fundamental reorientation of its field staff, including changes to the curricula used in training staff of PAs. Nishorgo has introduced such programs on a small scale, but now this needs to be woven into the normal operational processes of the Department.

More generally, the implication and opportunity is to re-think the role of foresters, to go along with increased emphasis on service provision, extension/outreach, and public involvement. They should think of themselves as "Ecosystem Managers in the Public Interest" rather than people who grow trees to produce timber.

Monitoring Changes and Impact

Nasim Aziz

The Project aimed to develop a participatory monitoring and evaluation system that would continue beyond the Project period. If the stakeholders took ownership of this system by participating in identifying and developing a simple viable system generating reliable information then this was expected to sustain and to facilitate learning and collective action.

To achieve this goal, the following steps were planned:

▪   through consultation with stakeholders, generate a minimum number of cost-effective and reliable indicators;

▪   with participation of stakeholders develop a system to evaluate the performance of the project; and

▪   institutionalize the system.

Starting Assumptions and Subsequent Adaptation

Analysis of secondary data all five PAs (Bari, A. and Dutta 2003 and 2004; Mollah and Nath 2003; NACOM 2003a and b) identified the following major threats that might be monitored by communities: illegal felling, collection of fuel wood, and plantation of fast growing exotic species. These three can be considered process indicators, so an outcome or output level indicator was proposed – one that would show impact on wildlife since the cumulative effects of these three activities is damage of wildlife habitat and subsequent declining wildlife populations. To guide this a literature survey was made for a range of mammal, bird, amphibian, and reptile species. Indicators to measure change in socio-economic condition and participation were also proposed, including: increase in income of poor stakeholders, level and scale of participation, and legal base for participation.

To expedite the process, a set of potential indicators was presented to the Forest Department (being a key stakeholder) during early 2004. Forest Department participants were asked to give their views on the practicability of indicators based on relevance, responsiveness, linkage, ease of data collection, ease of assessment and cost, but there was hardly any response. This was most likely because effective monitoring of biodiversity and forest health were new concepts for the Forest Department which did not expect that such monitoring would work due to lack of manpower, capacity and budget. Moreover, illegal felling is a sensitive issue and fuelwood extraction is very widespread. There was less expertise in managing natural forest relevant to PAs than in managing plantations (often of exotic species), and monitoring of participation had not been adopted before.

The project team made field visits to evaluate the feasibility of potential indicators and revised them to: illegal felling, basal area estimation, photo-monitoring (to capture illegal felling and increase in natural regeneration and to use photographs as a communication tool), selected bird species populations, and a community scorecard to measure socio-economic improvements and participation.

Illegal Logging Data

The project decided to use the "Offence Registers" of Forest Department (FD) as the source for illegal felling data in order to strengthen the already established system and avoid introducing a new system. Under the Bangladesh Forest Manual (part 2), each management unit must register the number of offence cases and number of trees felled. The Chief Conservator of Forests then sends regular reports, including illegal felling data, to the relevant ministry. It would also bring transparency and accountability, and make such information more available to the public.

However, the field level Nishorgo staff raised questions about the reliability of this data as in some cases the project staff found tree stumps covered with soil by FD staff. Bureaucratic barriers were overcome to access such data. To overcome the reliability question, a basal area survey was planned (the method of data collection is comparatively easy and less time consuming).

The Project monitoring team members collected illegal logging data from the Offence Registers spending hours with FD officers to develop relationships, as well as in the field. Data were cross-checked by finding in the field the serial numbers that FD is required to hammer into tree stumps, and the FD was informed of the location of stumps which they had missed and later it was crosschecked if those were registered. The Project worked hard to improve the reliability of the data, but once the Project ends, will it remain at the level it is now? Most likely no, except where there are interested and well motivated Assistant Conservator of Forests and Range Beat Officers.

In practice some FD officials were found to have little interest in generating and acting upon reliable data on tree felling and habitat change in Protected Areas. For example, in Lawachara NP the Project team summarized illegal felling data for the financial year 2003-04 (baseline data) and the official record totaled 1,192 trees felled,. A loss of about 100 trees per month is clearly substantial, and the official figures showed 709 trees felled in 2002-03, yet the DFO stated that illegal felling had declined and was not a concern.

Timber processing structure in Teknaf Wildlife Sanctuary
[Nishorgo Support Staff]

However, in some PAs, the FD attitude is still that only FD staff can go inside the forests. For example, in Teknaf Wildlife Sanctuary in April 2005 Project staff and some Forest Guards visited deep inside the PA and found a log processing site (see photo below). In order to ensure transparency it would be better if local stakeholders including members of Co-Management Councils and Community Patrol Groups are involved in field inspections and patrolling.

Since 2007, the FD staff holding the positions of Member-Secretary in the Co-

Management Committees (CMC) have reported the number of trees felled each month in the CMC meeting. This has succeeded in bringing the issue in front of the CMCs. Official actions were taken against FD officials found to be implicated in felling (one at Rema-Kalenga WS and the other at Teknaf Wildlife Sanctuary) and some members of community patrolling groups were changed (at Lawachara NP) due to alleged involvement in illegal felling. But still there is a contest of laying blame on each other between the Department and the community.

The terminology and focus of FD is still on high timber value trees not on the total habitat. During winter 2004 members of the NSP monitoring team were hiking towards Rema-Kalenga WS. They spotted in the distance someone processing a felled tree who ran away, leaving behind a teak tree from a plantation in the Reserved Forest adjacent to the WS. The team noted the location, sent a local person to inform the FD and carried on. After 10 minutes, they saw a young man coming out of the PA with a log on his shoulder. He did not seem to be worried. When stopped and asked what this tree was, his verbatim reply was "D-class", and when asked again he gave the same reply. "D-class" is a FD term for low value timber, but the answer was unexpected from a local person and this revealed that local people are allowed in practice to fell any "D-class" tree within the PA. The implication is that local FD staff are not concerned about loss of trees of low timber value when in fact they are vital wildlife habitat.

Other practices having serious negative implications for habitat restoration include burning of vegetation on hills for ash as fertilizer for the adjacent agricultural land, and cutting of saplings of lower class timber as either fuelwood or for binding/carrying materials/tools. Changes are necessary not only in policy but in its application and practice. The Project did demonstrate how the mindset of local inhabitants can be systematically changed. The Banskhali CMC of Chunati WS members discussed the use of naturally regenerating saplings (locally called bari) as sticks to carry sungrass. Sungrass grows profusely in these hills as a result of repeated burning, and hundreds of local people harvest sungrass. The CMC raised local awareness of the negative impact of using saplings and burning by disseminating leaflets, public announcements (through loudspeaker), help of Imams, and visiting local markets where sungrass is sold. Eventually use of saplings as carrying tools fell.

Burning is still widespread in Teknaf GR and Rema-Kalenga WS. It is not only done by local people, but also practiced by FD as part of its traditional clear felling and re-planting cycle of forestry operations in plantation, which local people use as a justification. Burning to clear undergrowth is cheap and takes less time. FD guidelines recommend burning twice areas earmarked for plantations before planting. This is designed to stop natural regeneration and is clearly contradictory to biodiversity conservation and should be ended.

Monitoring also revealed that existing financial rules have a major part in current practices adopted by FD where replanting is needed in PAs (and in other forest lands). Under the current Public Procurement Act (2006) and Public Procurement Rules (2008), FD has to call for quotation or tender for plantation activities costing any amount from Tk. 15,000 to Tk. 2,000,000. Although the Public Works Department's construction rates include an allowance for the contractor's profit and taxes (VAT and income tax), there is no such provision in the FD's plantation cost schedules. Moreover, unlike construction works, the contractors do not employ technical persons for execution of plantation activities. With a lack of formal provision for contractors to make a profit, and with low allocations from the government revenue budget

for the proper operation and management costs of FD field units, it should not be surprising that corners are cut to manage funds.

Basal Area Estimation

The Project team selected some young people (Class eight +) from the local communities and trained them to record data using wedge prism (a wedge-shaped piece of glass) to minimize survey time. They were oriented on the concept of probability and various sampling designs. After consulting with them it was decided to do non-random sampling - systematic sampling for Lawachara NP and selective sampling for the other four PAs. They took measurements in parallel with the project team and proved they could complete baseline basal area estimation. However, this did not become an annual event and at the end of the project, the Project team had to alone as most of the volunteers were busy with their enterprises, especially eco-guiding.

Photo Monitoring

This method was used for the first time in Bangladesh. The approach was adapted from Hall (2001a and b), Reynolds (1998) and Edelen and Crowder (1996). At the start and end of the project 156 photos were taken distributed over 99 photo points in the five PAs to capture illegal felling as well as changes in natural regeneration. However, during the planning and baseline stage it was a struggle to locate representative photo points as Project activities concentrated more on the wider landscape area to mobilize people and less on specific activities (other than some tree planting) within the actual PAs. The team consulted with local volunteers and eco-guides and decided to take photos along the boundary of the PAs as most pressure occurs there. GPS were used to record photo point locations, the direction (angle from north) photographed was noted, and a digital camera was used.

Some photo sites were chosen for specific groups of trees that might be vulnerable to illegal felling. However, this focus sometimes missed the opportunity to measure undergrowth recovery, while in other cases by chance it measured substantial changes. The photo site illustrated below is at Dalubari in Lawachara NP in a Eucalyptus and Acacia plantation of 1988, although no Acacia trees were left in 2005, all had been cut. The site was chosen to see if the Eucalyptus trees would remain. As of April 2008 the Eucalyptus trees remained (E) but

Example of photo-monitoring results from the southern part of Lawachara NP (adjacent to Dalubari)

the most notable difference is the undergrowth (G – ground and R – regeneration). Due to rapid recovery of undergrowth reaching the height of the photographer, the 2008 picture could not even be taken from the same angle or spot as in 2005 (note the position of the walking trail (R) in the two photos).

Community Scorecard

The Project attempted to develop community scorecards based on consultations with focus groups of 30-40 local stakeholders (living adjacent to PAs) whom the project had just started to organize (for example as forest user groups). In the discussions it was suggested that local people have the right to influence project activities based on their own monitoring since the project was designed to benefit local people as well as the PAs. However, the Project team focused on changes in socio-economic condition offering quantitative (income) and later qualitative indicators (pictorial categories such as happy to sad face) (Aziz 2004). Moreover, participants were asked to share experiences in taking loans in the groups. This process failed to develop a set of indicators because it focused on sensitive individual financial issues and met with a mixture of local stakeholders together where rich and poor are reluctant to discuss such matters in front of their opposites. In addition local people had no expectation of influencing forest management and were suspicious about the Forest Department. Therefore the Project decided to assess livelihood impacts using a formal survey covering changes in incomes and other livelihood indicators for a sample of individual beneficiaries under different livelihood support activities.

It was then decided that community scorecards would be used to cover: co-management policies and model, institutional capacities of local people to carry out co-management, improvement in economic status of local people, and improved practices that help to restore biodiversity or health of the PAs. Changes in these four aspects would be measured by several indicators for each aspect on a predetermined scale of 1 to 4, where 1 represents the minimum and 4 represents optimal conditions. Initially the Project included too many issues in the scorecards, without thinking about the time required - one to one and half hours is too long for people who already spend time on the CMC main activities as voluntary service.

Bird Monitoring

With regard to choice of bird species to monitor, locally experienced birdwatchers (e.g. Enam ul Haque, Paul Thompson) were consulted and finally eight species were selected based on their: expected responsiveness to interventions within five years, ease of identification and familiarity to local people, and communication value (although one of the species chosen does not occur in the northern PAs). The data collection method was to be simple enough to engage local partners in monitoring at any stage.

An independent wildlife expert (Dr. M. Monirul H. Khan) from Jahangirnagar University was given the task to lead the survey team comprised of participants from Bangladesh Bird Club and the local communities living around or close to the project sites, including local eco-guides and Co-management Council members. The team members were trained so that they could play a significant role in the survey (Khan, 2005).

Lessons Learned

Lessons with Respect to Monitoring

Voluntary monitoring is unlikely to be sustainable. Most of the monitors also became eco-guides, training as monitors strengthened their knowledge base for use in guiding visitors. However, in winter there are more visitors. As a result, eco-guides preferred to spend time where they would earn more money. Even when the Project paid Taka 300-500 per day for bird or vegetation monitoring, they preferred guiding which is physically less straining (walking on the trail compared to entering into forest and climbing hills). In most cases, the local volunteers did not find it relevant to them to collect vegetation data (illegal felling or basal area estimation) or monitor birds, rather they were more interested to provide information on visitors which is more relevant to them. Although eco-guides were trained in data collection techniques and methodology, they were not provided them with bird books (information sheets were provided) nor with binoculars.

Eco-guides may not be the most appropriate local monitors. For example, other local people knowledgeable about birds irrespective of age or education level could have been selected which would have broadened community involvement and might have enhanced long term community based monitoring.

Linkage between volunteers and CMCs. Representatives of the trained eco-guides were expected to be included in the CMCs, but this did not happen. As a result there was a gap in the flow of information from them to the CMCs. Also the project did not try hard to find a way of making this connection.

For photo-based monitoring, take many photos systematically along well documented routes and without pre-planning what they are expected to cover. There were insufficient photo sites to measure impacts. Routes that could have had photo sites were not covered. Also at photo sites 360o coverage was not made. As a result, at the end of the project, it was often found that illegal felling, natural regeneration, burning or other changes had occurred on the other side to the one covered by photos. Digital systems have potential to make much more extensive photo coverage. Eco-guides took the team to places they deemed would be of interest, and it was expected those sites would remain accessible. As a result, despite instructions in the photo monitoring manuals, insufficiently detailed location notes were made for a new monitor three years later to find the routes used, even when GPS coordinates were also taken.

Birds can be used as a tool to monitor forest health. Several of the species selected showed increases in numbers consistent with recovery of their preferred forest micro-habitats (Khan 2008). More species might be monitored to strengthen sensitivity of the method, since it was found that such monitoring requires specialist inputs and is not easily undertaken by local people.

Demonstrate rather than describing your method. The team explained the monitoring methods on several occasions to the Co-management Committees and sought their advice for improvements or selection of indicators. However, non-visual methods were used and they did not understand the scorecard system. Lastly, the Project decided to demonstrate the method and

scoring with each CMC separately. The CMC members then understood the method clearly and found it interesting. However, the opportunity was lost to make improvements and build capacity to carry out the scoring without external facilitation.

Participatory monitoring needs to be participatory at all stages and should be seen as an important tool for learning and communication. Although, several training programs related to co-management were held for CMC members, the process of scoring participation enhanced their understanding. It helped CMC members understand better that although the FD takes up activities in core areas of PAs they as CMC members have the right to be consulted or even take decisions and make recommendations, depending on the topic. Again, many CMC members thought that their participation had no legal basis or that it was only for the project period. Gradually it become clear to them that their role has a strong legal base and is not limited to the project period.

Conclusion

Monitoring needs to follow the same principles as co-management in general. Consciously or unconsciously, the Project used local people to collect data. The Project selected indicators and decided how to collect and analyze data, who would collect and analyze data, and its subsequent use. Effective participatory monitoring could be enhanced by the following steps:

- As part of participatory planning the diverse stakeholders should identify and agree targets and indicators of their success and failure along with management priorities.

- Communities need to be consulted about the detail of monitoring (for example local communities might have proposed bird species of value and interest to them, and people with traditional knowledge to take part in monitoring).

- Data on impacts revealed by monitoring need to be used by the co-managers, where appropriate positive impacts can be used to raise awareness of the general public (for example restoration of ground and undergrowth dependent birds could be publicized by the CMCs to raise the importance of conservation in local communities).

- Monitoring should be a collaborative shared responsibility not the responsibility of a small team specialized in this function which means that information is not shared or used to guide management interventions.

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Remote Sensing and Spatial Information in Support of Co-Management Planning

Nasim Aziz, Ruhul Mohaiman Chowdhury and Mohammad Razu Ahmed

The Nishorgo Support Project design called for production of Protected Area (PA) management plans, demarcation of PA boundaries and monitoring of impact on human and natural environments (Forest Department 2005). Initial site level appraisals (Mollah et al. 2004a to e) generated a mass of descriptive information from in and around the pilot PAs which needed to be joined with spatial information to support detailed co-management planning. For example, the studies identified villages, brickfields, saw mills, furniture shop owners, and other stakeholders using resources from the pilot PAs. The reports also showed how extracted resources flow from PAs to different growth centers and markets (known as hat or bazar). Market names were known but the locations needed to be mapped.

The landscape focus highlighted by Nishorgo required management interventions beyond the borders of FD lands. But the Forest Department (FD) only deals with spatial data (vegetation, offices, roads, rivers, streams, etc.) within the boundary of lands under its jurisdiction. So to meet the broader needs for spatial information, database development was outsourced to Center for Environmental and Geographic Information Services (CEGIS), which is the centre of excellence for Remote Sensing (RS) and Geographic Information System (GIS) in Bangladesh. The GIS based Resource Information Management System Unit (RIMS-GIS Unit) of FD was consulted, and by the end of 2005 a vector database had been developed building on the RIMS base maps which included roads, railways, rivers, civil administrative boundaries (international, district, upazila, union and mauza/village), growth centers, public and community institutions (education, health, etc), and settlements (CEGIS 2005). To this were added landuse/cover maps for the surroundings of the five PAs (plus Sitakunda Eco-park which was expected to be a sixth site) using IRS LISSIII images (CEGIS 2005). As a test case, a very high resolution satellite image (QuickBird) was bought for Roikheong Beat (Whykheong Range) of Teknaf Wildlife Sanctuary to assess its utility for quantification of forest loss, detailed landuse/cover mapping and possible use for communication and outreach.

When it was subsequently decided to initiate co-management in the Modhupur National Park, equivalent digital databases were developed for this area. In addition, considering the complex pattern of change and encroachment there, a database was developed to show the spatial degradation of forest over the last 40 years.

Starting Assumptions and Subsequent Adaptation

At the onset, we began with the assumption that significant starting information was already available in databases (vector) held by different institutions including RIMS of FD, National Water Resource Database, CEGIS, Local Government Engineering Department (LGED), and International Maize and Wheat Improvement Center. However, no existing database satisfied the range of needs across the landscapes (for landuse, administrative structures, forest types

and population centers), so it was decided to merge and update the existing ones.

The project had expected to develop databases by building on the expertise already existing at that time in the FD RIMS-GIS Unit. The aim was to build the capacity of existing staff and new recruits to the Unit, as the best means of delivering cost-effective spatial analysis. However, the RIMS Unit at the time was under nearly constant demand for spatial analyses, and had little spare time and resources to apply to Nishorgo. The one Assistant Conservator of Forest working in

RIMS-GIS Unit was not allocated time to lead such an activity, but did prepare an assessment report on the existing databases for the five PAs (Chowdhury 2004).

Hiring individual consultants, educational or commercial organizations were considered. Nishorgo opted to go with CEGIS, which was a strategic partner and designated "resource firm" in IRG's project proposal. CEGIS would deploy its team as and when needed based on its experience in delivering high quality products to deadlines. CEGIS is the sole distributor of some satellite images in Bangladesh, and has skilled and experienced geo-informatics professionals, equipment and training facilities.

Project staff, the Assistant Conservator of Forest RIMS-GIS and CEGIS jointly reviewed available data, needs, ways of addressing these gaps, and potential sources. Based on the resultant CEGIS report a two-phase approach was adopted. The first phase included the entire vector data (administrative boundary, roads, rivers, growth centers, etc.) generated from various sources. The second phase included generating new databases to fill gaps, notably generation of landuse/cover maps.

Remote Sensing images were a very useful tool for developing comprehensive geo-spatial databases required for the current project. For images to produce landuse maps, SPOT XS and Landsat ETM+ were considered. However, the later produces coarser spatial resolution (30m) images and since 2003 it provides low quality data. Instead LISS III (MSI) image was selected. The LISS III offers more recent data (2004-05) of a better spatial resolution (24m) and is considerably less expensive than SPOT XS (20m spatial resolution). The current price (2008) of IRS LISS III (MSI) is USD 330 (ground coverage 140 km by 140 km), compared with SPOT (XS) images costing USD 2700 to 3850 for ground coverage of 60 km by 60 km, and IRS Pan or Mono images (6m spatial resolution) costing USD 415 with ground coverage of 70 km by 70 km. CEGIS, being the authorized dealer of the LISS image, also could help FD access images in future. It was agreed to use the latest archived IRS P6 Mono image (6m) for more detailed information on road network, growth centers, and settlements which are not present in any other available database.

It was agreed to use broad landuse classes outside the PAs such as agriculture, homestead and settlements, tea gardens, and water. To generate detailed land cover data used by the FD inside PAs would require thorough field verification. It was decided that CEGIS would try to follow the FD classification system (plantations of different types and ages, high and low forest, scattered trees, etc) to the extent possible and FD would help by incorporating data from the field. It was also agreed that FD staff would continue to update the data sets. Qualified FD staff were to accompany the CEGIS remote sensing ground-truthing team when visiting
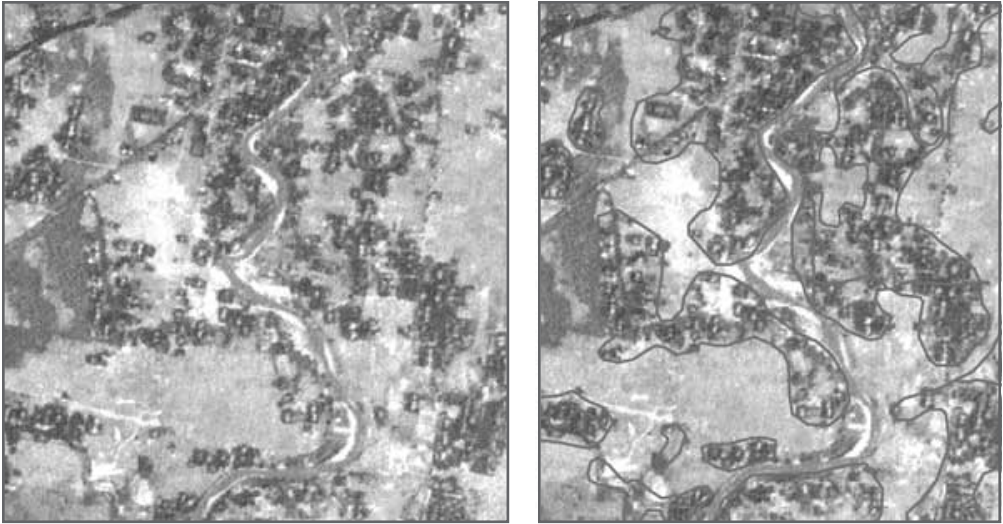
Sample of an IRS Pan (6 meter) image from where settlements have been captured. The image on the left was used to capture settlements, on the right, the captured settlement boundary (line) is overlaid on the original image for cross-checking.

different areas of the PAs to generate the classification. A number of factors made this difficult. Most importantly, FD field staff had other occupations that made it difficult to allocate time for this work. In addition, the FD plantation journals that should have guided such updates were in most cases poorly maintained, outdated or unavailable. In the end, CEGIS teams had to proceed to interpret forest classes as closely as possible given this lack of close knowledge sharing with the FD.

Bundle image (0.6m Pan + 2.4m MSI) product of a high resolution satellite image (QuickBird) was purchased as a test case for one small area to assess its quality, usability in distinguishing types of forest stands, use in determining encroached areas, to encourage research, and to use it as a tool in discussing the extent of forest degradation with local communities. Accordingly an image was purchased and classified for the Roikheong and Saplapur Beats of Teknaf Wildlife Sanctuary, including a small buffer area to the north of the Reserve. The image distinguished precisely and adequately small areas of non-forest landuses (agriculture, settlements, encroached forest areas, open water bodies etc.). Forest areas were distinguished based on canopy density (high, medium and low canopy). But differentiation among vegetation types (natural versus plantation) within forests could not be done since ancillary data from the field level offices were not found. However, FD has said that it will undertake further evaluation of the image to explore the potential application of such imagery for forest and PA management.

In Bangladesh each organization working with spatial data sets uses its own choice of geographic reference format including Bangladesh Transverse Mercator (BTM), Modified Universal Transverse Mercator of Bangladesh, Universal Transverse Mercator (UTM), and Lambert Conformal Conical (LCC) projections. Similarly the Survey of Bangladesh uses 1:50,000 and 1:250,000 scales with a permanent grid, LGED uses 1:50,000 for upazila maps, and RIMS uses 1:15,000, 1:25,000 and 1:50,000. As a result, data sharing among different

agencies is made difficult on technical grounds. Inter-institutional constraints further reduce the possibilities for sharing spatial information, and this became quite clear during Nishorgo's attempts to both obtain and harmonize data across some of these departments. Harmonizing all data sources in the country was beyond the objectives of the Project. In the end, we were obliged to select one source for geo-referencing all other spatial data sets, and so proceeded to use the IRS pan image. We believed this to be an acceptable solution since the CEGIS-archived IRS Pan images retain high geometric positional accuracy, which are geo-referenced by using Ground Control Point coordinates collected by Differential Global Positioning System (DGPS) survey.

It became apparent during the development of spatial data sets that important contradictions existed between the PA boundaries as represented on the maps used by the Forest Department and a number of recognized geo-referenced points on the new maps. During field surveys an attempt was made to correct the PA boundaries. Neither reserve forests nor PAs have well demarcated boundaries, and often the forest boundary (produced by RIMS-GIS Unit) does not match with the mauza boundaries the Directorate of Land Records and Surveys (DLRS) which were digitally captured and corrected by CEGIS, ownership of the corrected data lies with CEGIS). This results in areas with either overlapping ownership/status or blank areas (with no clear status) along the periphery of the forest reserves. In discussion with FD, it was evident that currently the boundary marks are not identifiable in the field and consequently the delineating points are also incompatible with the mauza maps of CEGIS.
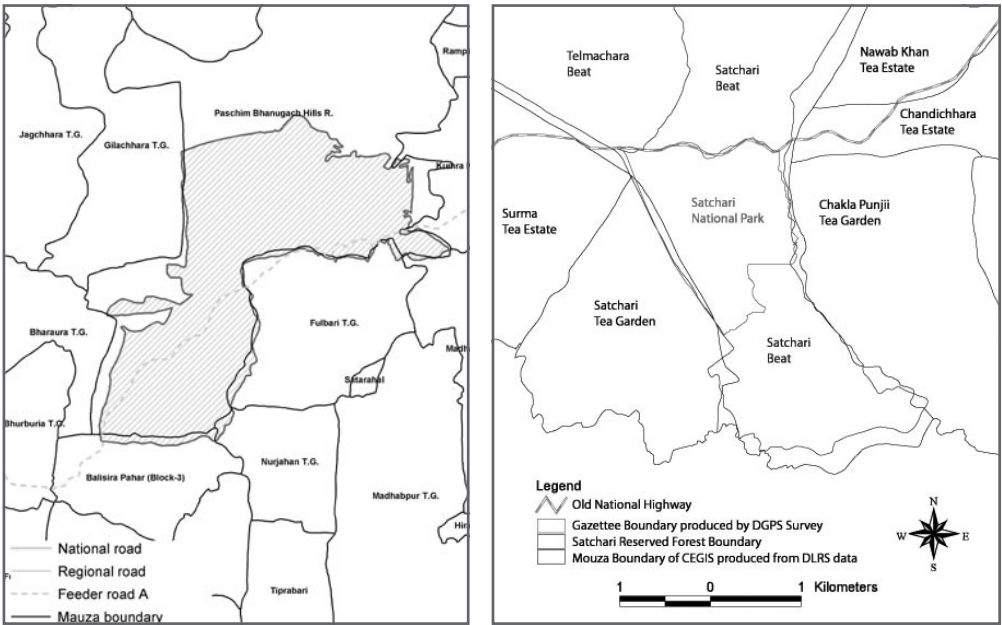
Mismatch in digital PA boundary between RIMS and CEGIS (DLRS data), an example from Lawachara NP

Mismatch in digital PA boundary between RIMS, CEGIS (DLRS data) and map produced from Gazette Notification through DGPS survey, an example from Satchuri NP

CEGIS assisted with a DGPS survey using gazette notification bearing and distance values of stations for PA boundaries in the three northern PAs and from this created boundary maps for Lawachara and Satchari National Parks. The method included identifying one, two or more existing boundary pillars in the field, collecting their positions using DGPS, recreating the map using AutoCAD by bearing and distance values, and geo-referencing the map using the corresponding coordinate values of boundary pillars. However, neither FD nor CEGIS mauza maps were found to be consistent with the recreated DGPS surveyed maps based on gazette notification values. This means the original survey for proposing an area as a PA was not done by a professional surveying team equipped with standard instruments or the PA boundaries did not follow any of mauza boundaries. As a result the Project identified revised digital PA boundaries for FD with reference to DGPS corrected latest IRS Pan or higher spatial resolution images.

The maps illustrate the differences found in boundaries, while the table aggregates the implications for PA areas based on CEGIS (2006). This shows that these problems of differences in area were much smaller in the case of Satchuri National Park where the boundary was originally demarcated by plane-table survey employing the surveyor frequently used by the Divisional FD who was involved during the preparation of the proposal for a National Park. But even in this case there are differences in boundary alignment.

Area differences for the pilot PAs between GIS database and Gazette Notification

Protected Area	Notified Area (ha)	GIS database (ha)	Difference (ha)
Chunati WS	7,764	7,810.50	+46.50
Teknaf GR	11,610	11,445.00	-165.00
Lawachara NP	1,250	1,221.20	-28.80
Rema-Kalenga WS	1,796	1,785.00	-11.00
Satchari NP	242.82	242.87	+0.050

The process was repeated for Modhupur National Park in greater detail, as historical data on the area exists. In particular, it was deemed important as a base for any future conflict management processes that a clear picture of the forest loss process be gathered from existing data. Accordingly, degradation over a 40 year period was captured using the following satellite images held in the CEGIS archive: Corona Space Photo Satellite (12 m, 1967), Landsat MSS (80 m, 1973), Landsat TM (30 m, 1989), Landsat TM (30 m, 1997), SPOT Multispectral Image (20m, 1999), and IRS P6 LISS-III (23.5m, 2007) (CEGIS 2008). A high resolution QuickBird (panchromatic and multispectral, spatial resolution: 0.60m and 2.4m respectively) 2003 image was also procured to prepare a detailed landuse/land cover map for Modhupur area (CEGIS 2008) to help in developing a better management plan. This time series of land cover change over 40 years may be used as a basis for Modhupur conflict mediation as well as management planning, but that level of dialogue had not yet taken place at the time of publication of this book.

Lesson Learned

Geo-spatial databases can be a tool for better management planning. The databases developed were important inputs to the process of defining the landscape areas for the five pilot PAs, for example in Teknaf Wildlife Sanctuary (Forest Department 2006). Mapping stakeholders with respect to each PA helped to understand the areas the project needed to work with and links between communities and forest PAs. Later in the project, the remote sensing maps were key base maps used to inform decisions on trail development, locating construction, and tourism planning.

All spatial databases of FD need to be updated with reference to recent images. The use of IRS pan image with 6-meter spatial resolution matches with the traditional FD maps at the Beat level (1:15,840). As a result it was found effective to capture features (roads, settlements, etc.) and develop base maps based on IRS pan images. It is recommended to procure IRS pan images for the other PAs and geo-reference existing databases with respect to such images.

Cost effective remote sensing data for forest monitoring. Forest Department can use IRS LISS III image (SPOT XS has been preferred by FD, but it is costly) to interpret forest classes or landuse. This is more cost effective than SPOT XS and gives a similar spatial resolution (20 m in SPOT XS compared with 23.5 m in LISS III) and spectral resolution (both have four bands: Green, Red, Near Infra Red and Mid Infra Red wavelengths). Using similar classification techniques, the forest types used by FD can be identified.

A mechanism to improve field collected handheld GPS data. All our spatial data used the BTM-JICA projection and was DGPS corrected. However, we did not find a way to convert the field data generated from handheld GPS to match the accuracy of the database. Handheld GPS collected data never gives the accuracy of DGPS collected data, but the accuracy of handheld GPS data can be enhanced using post-correction methods. A post correction method can be used for future spatial data collection.

There is a need to re-survey the boundaries of PAs. The traditional method of plane table survey used for Protected Area boundary demarcation used for Gazette Notification did not make use of re-validation using aerial photographs. As a result, the notified boundaries often do not coincide with natural features like the foot of hills, and so the official government Gazette notified area does not match with the RIMS database area (see earlier table). Under NSP, we could not correct or rectify inconsistencies in PA boundaries except for Satchari NP. We propose that a plane table survey is really needed (starting from Gazette notification boundaries) in collaboration with DLRS whereby DGPS will be used for geo-referencing the survey outputs for all PAs to correct the notified boundaries and boundaries in the field as necessary to eliminate inconsistencies.

Need to strengthen and streamline RIMS activity. The full potent of satellite images (LISS III) for identification of various landuses adopted by FD (natural forests and plantations of different types) was not achieved, although planned for the field work. This failure was the result of RIMS not having an updated database. The RIMS-GIS unit has to update data for all the FD Management Divisions with limited manpower. Yearly updating (mapping and entry for planting, thinning, clear-felling, failed plantations, etc.) of data sent from field level including

PAs takes a considerable amount of time. Moreover, the Management Divisions do not send yearly updates, rather data for 2-3 years are sent at one time so without a planned spread of work, backlogs arise and the RIMS-GIS data are not up-to-date.

Priority is systematically given to remote sensing needs of the FD territorial divisions over the Wildlife Circle, and this needs to be re-dressed. It became apparent during the five year project that wildlife-related mapping and remote sensing needs in the Forest Department are a second level priority after actions concerning the territorial divisions. This seems to reflect a wider emphasis on production forestry and plantation management over landscape and ecosystem management in and around Protected Areas. Without re-dressing what appears to be a bias in this sense, it would not be possible to vastly improve the remote sensing activities of the FD RIMS in support of biodiversity conservation.

Need to strengthen research at FD and educational institutions. Much spatial and non-spatial data (inventory data) generated by past projects and now by NSP is held in RIMS (Chowdhury 2004). Rather than keeping these data in the vault, RIMS unit enabled by a strong institutional mandate should encourage the use of this valuable data by making it available to educational institutes for collaborative research. The implicit FD policy on spatial information sharing has been not to allow open access to databases, and to allow limited access only when requested by a recognized government partner with appropriate letters of request. Under Nishorgo, the FD made a number of critical spatial databases openly available (for example, the coverage of the Sundarbans made available in the Sundarbans CD). Data on the Nishorgo pilot sites were made available in the Applied Research Support Tool CD (see Chapter 20). Without openly publicizing the fact that it is willing to make data available to interested researchers, the FD will not be able to tap into productive learning partnerships with national researchers and research organizations.

Lack of use of satellite images in communication. It was intended to use satellite images (QuickBird images for Whykheong region, see following images) to mobilize local communities by showing them comparative maps from two different times in high resolution. The images from QuickBird are similar to photographs, and we believed that approaches might be tested in
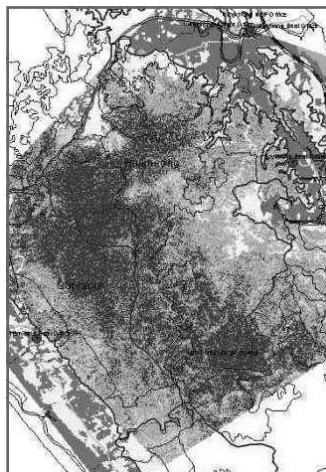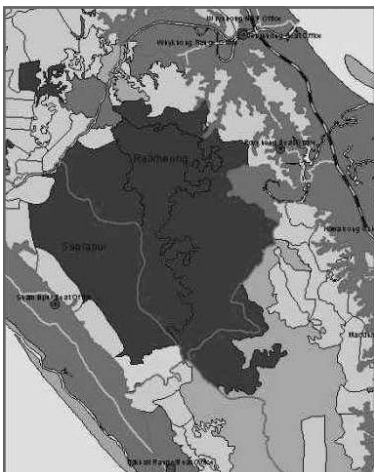
The dark colored area of the left hand map is the natural forest identified from aerial photographs of 1995.

The spotted darker area in the right hand image is the extent of natural forest in 2003, identified from QuickBird image.

We expected that purchase of this high resolution image for Roikheong and Saplapur Beat would be useful for management purposes, including mobilizing the poor against various issues.

those areas to engage communities in the interpretation and use of such information. Although entreaties were made to university researchers to use such information, it was not taken up by any of them. The images were extremely useful, however, in communication to national policy makers, especially insofar as they demonstrated loss of important blocks of natural forest in high detail. But it was considered too complex and redundant to explain these to local communities who were assumed to already be well aware of the trend of forest loss.

Gradual phased implementation of detailed plans is needed to strengthen RIMS. A major over-haul is needed for RIMS including an increase in staffing, enhanced capacity of RIMS personnel through training, updating GIS and remote sensing software, and use of GIS in the management information system of FD. Rather than making changes haphazardly, a detailed plan laying out the steps necessary to make the Unit fully effective is vital.

Conclusions

The RIMS-GIS Unit of FD was established to provide planners with reliable up-to-date spatial and statistical data for realistic planning. However, that is not the case at present due to lack of institutional commitment, vision and support. Nishorgo has highlighted how systematic improvements could be made based on strengthened capacity and critical assessment of the priorities for use of GIS and cost effective choices of images and methods. These changes would not only contribute to better informed PA management but to all activities of the FD.

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10

Using Indicator Birds to Assess Management Impacts

Nasim Aziz and M. Monirul H. Khan

The Nishorgo Support Project (NSP) strived to develop a functional approach to co-management of PAs that would slow the loss of forest habitat and biodiversity. Within the five pilot PAs of NSP, a measurable improvement in forest habitat and biodiversity was expected by the project end in May 2008.

In general, the principal cause of forest loss at the pilot PAs is the human-induced removal of forest woody biomass, in the form of timber and firewood. Co-management was expected to help achieve a reduction in illegal logging and fuel wood removal, which would lead to a gradual re-establishment of forest habitats – especially natural regeneration of trees, shrubs and herbs – and improved levels of biodiversity.

It was in this context that the Nishorgo effort sought suitable indicators that could measure changes in habitat conditions, register impacts on biodiversity and serve to assist in communicating forest changes both inside the Nishorgo program and to the broader public. The Nishorgo team proposed that forest bird populations could serve as proxy indicators of forest structure, i.e., forest health, and biodiversity. Accordingly, eight species of primarily forest birds were selected and recorded in sample areas for four consecutive years. Local people were involved in the process, with the idea that they would be partners in the longer term conservation effort. Lessons from this endeavor are described below.

Starting Assumptions and Subsequent Adaptations

The pilot PAs where Nishorgo intervened were Lawachara National Park, Rema Kalenga Wildlife Sanctuary, Satchuri National Park, all in north-east Bangladesh; and Chunati Wildlife Sanctuary and Teknaf Wildlife Sanctuary in south-eastern Bangladesh, falling into the bio-ecological zones of Sylhet Hills and the Chittagong Hills, respectively (Nishat et al. 2002). These zones are characterized by mixed- or semi-evergreen forest types.

The two southern PAs can be characterized as heavily degraded, virtually without any tree cover apart from a few scattered patches. Compared to that, the forest cover in the three northern PAs is in better condition. Rema Kalenga WS being the most remote among the three still has some natural forest cover left as well as open clearings, Satchuri NP is a mixture of natural forest, and long- and short-rotation plantations. Natural forest does not exist in Lawachara National Park but it comprises mostly of old plantations of native species similar to a natural forest, with some more recent plantations of exotic species (NACOM 2003 a,b,c and CODEC 2003, 2004), together with regenerated natural vegetation.

The principal causes of forest loss in the pilot PAs are illegal felling and fuelwood collection (Mollah et al. 2004 a, b, c, d, e). As large trees have already been lost, fuelwood extraction is the main problem in the southern PAs, whereas illegal tree felling is the major concern in the

northern PAs. Illegal timber removal is destroying the overhead canopy and fuelwood removal involves cutting of young regenerating saplings that are necessary if forest is to re-establish.

TheNishorgo initiative assumed that through co-management, a broad-based action against illegal felling and indiscriminate fuelwood collection could be taken. This was to include the involvement of poor people (often the illegal fellers and fuelwood collectors) in alternative livelihood activities, which in turn would reduce their pressure on the forests, thereby native vegetation was expected to gradually re-establish and consequently support typical forest biodiversity within the PAs.

The challenge for Nishorgo was how to estimate with some level of confidence whether forest and biodiversity loss was being slowed and even reversed? The project team designed and implemented an impact monitoring program including social and biophysical indicators that, taken individually and together, would indicate whether the package of interventions was having the expected impacts (see Chapter 7). As part of this monitoring program, the team sought one or more biological indicators that could demonstrate change in forest conditions and be useful at the same time for communication purposes.

Measuring Biodiversity

The overall strategic objective of the Nishorgo effort was to increase biodiversity at the pilot sites. Measuring change in diversity of species, however, is a long-term and complex exercise. The team recognized that measurable changes in diversity and populations of species would be unlikely to take place within the five years of the Nishorgo Support Project.

Biodiversity and composition indicators are generally used to assess areas in need of or to determine priority for conservation (Hannon and McCallum 2004). An example of a biodiversity indicator is the number of extinct, endangered, threatened, vulnerable and endemic forest-dependent species by group (birds, mammals, vertebrates, and invertebrates).

In Bangladesh, the difficulty of estimating changes in such species diversity measures was made complicated by the lack of baseline knowledge of all existing species at each Nishorgo PA. The FD – and a number of participating university researchers – had called for detailed inventories for all the Nishorgo PAs. Even if detailed inventories had documented the majority of species present in the PAs, not only would this need to be repeated, but species counts might show little change associated with co-management in the short to medium term.

Most importantly, an inventory of biological diversity, even if it does generate reliable statistics, is just not cost-effective for the management needs of our Protected Area system. We needed indicators of change that could be measured regularly, and yet that still have statistical validity. Also, and equally importantly, the experience of other countries showed that we should take steps to develop indicators of change that could be tracked by local impacted people themselves, not just by an external group of scientists or planners. Accordingly Nishorgo sought indicators and a monitoring and analysis procedure simple enough to be incorporated into the Forest Department's monitoring scheme for PAs. Such simplicity would ensure continuation of the monitoring program in the long-term.

The Nishorgo Support Project chose the following criteria for identification of species as indicators of forest change:

- Responsive to interventions within the impact period: field interventions were for five years (2004 to 2008), so the indicator should be capable of changing within that time.

- Statistically verifiable: the indicator must be replicable and have an acceptable level of confidence about change in values over time.

- Easily comprehensible to the general public: the average citizen without scientific background must be capable of understanding the implication of an indicator. Such an indicator would be a critical means of conveying success or failure of these interventions to local, national and international stakeholders.

- Have communication value: not only should an indicator be easily understood, it was equally important to look for indicators that have social or cultural power as a tool for communications.

- Simple enough to engage local partners in monitoring: as part of co-management the involvement of local stakeholders in the monitoring process is crucial for use as a management tool and to heighten their conservation awareness. It was assumed that local co-managers could be trained and would be capable of collecting data for subsequent measurement of changes.

The choices for species indicators are numerous and range from biodiversity and composition indicators, population indicators, guild indicators, and condition indicators, species-at-risk, umbrella species, keystone species, etc (Hannon and McCallum 2004).

Population, guild or condition indicators are used in assessing conservation and management interventions (Hannon and McCallum 2004). Population indicators are those whose population dynamics reflect changes in dynamics of other species, and guild indicators represent population variation for a group of species showing similarity in resource use (a particular guild) to resource change (Hannon and McCallum 2004). For example, bird species can be categorized into different guilds – feeding guilds (based on diet: carnivore, frugivore, insectivore, granivore, etc.); foraging guilds (in forest based on vertical feeding zone: aerial, canopy, middle layer, lower layer and ground), or nesting guilds (ground-nester, canopy-nester, cavity-nester, and shrub-nester). A criticism against using guild indicators is that the population dynamics of one species within a guild often does not represent other species in that particular guild (Hutto 1998). As such one cannot say for sure that an observed increase in abundance of shrub-nesting bird X indicates the same for shrub-nesting species Y and Z.

Condition indicators are specialist species representing particular environmental conditions or habitat requirements and are responsive to disturbance (Hannon and McCallum 2004). The Nishorgo Support Project proposed to use condition indicator species because co-management was expected to improve several habitat conditions – a reduction in tree cover loss, and increase in ground vegetation (shrubs, herbs, tree-seedling and saplings) cover. The aim was to document whether any such changes have an impact on the population of condition indicator species.

Why Birds as Bio-Indicators?

The Nishorgo team undertook a literature review of all recorded mammals, birds, reptiles, and amphibians to identify condition indicator species for each of the five pilot PAs. Numerous animal species were rejected in this process, on the basis of the criteria listed above. In particular, it was difficult to make a clear cause and effect linkage between the expected habitat improvements and some of the candidate mammal species (e.g., Red Muntjac or Barking Deer Muntiacus muntjak).

Birds were considered to be more suitable as indicator species because many species are associated with particular habitats such as forest, wetland, or grassland (Browder *et al*. 2002), they could potentially demonstrate a cause-effect relationship as forest species are associated with particular habitat strata (upper, middle or lower canopy, or shrub or ground dwellers (Canterbury *et al*., 2000), and being relatively short lived forest birds were likely to be responsive to habitat changes within the project time-span (Browder *et al*. 2002). Moreover, Bangladesh has a small but active society of bird enthusiasts who could participate in initial measures and could collaborate with the local stakeholders around the PAs to bring them a new perspective and appreciation from visual and aural observation of birds.

Indicator species were selected through two discussion sessions in 2004 involving three birders with extensive experience in Bangladesh: Enam ul Haque, Paul Thompson and William Collis. Finally seven bird species were selected: Red Junglefowl (*Gallus gallus*) - ground, Oriental Pied Hornbill (*Anthracoceros albirostris*) - canopy, Red-headed Trogon (*Harpactes erythrocephalus*) – mid-storey, Greater Racket-tailed Drongo (*Dicrurus paradiseus*) – mid-storey, White-rumped Shama (*Copsychus malabaricus*) - understorey, Hill Myna (*Gracula religiosa*) - canopy, and Puff-throated Babbler (*Pellorneum ruficeps*) - ground. In addition White-crested Laughingthrush (*Garrulax leucolophus*), which is absent in the north-east, was added for the south-east as it is a charismatic and easily identified mid to understorey species. Photographs of these eight birds are shown in the color insert.

In general, all of the species selected have some characteristics in common – they are colorful birds or sing distinct songs (making them easy to detect during surveys), all are resident which would represent year-round habitats and could be surveyed in the breeding season, none of them are rare (rare species would need a greater survey effort to estimate populations), and they represent different strata of the forest.

Indicator Bird Survey

The survey team was formed by participants from Bangladesh bird club (Bbc), university students, and the local communities living around or close to these PAs, including local eco-guides and members of the Co-management Organizations, together with Forest Department staff. The survey team was led by Dr M. Monirul H. Khan of Jahangirnagar University. The local team members were trained during each survey so that they could play a significant role in the survey process. In each year 2005 to 2008 the survey was conducted during a seven-month period covering the breeding season of most species (February-August), with about 30 observation-days in the field per year. Strip transects were used to estimate indicator species population densities (see following table).

Name of Protected Area	Number of transects	Total transect length (km)	Range (km)
Lawachara National Park	6	3.72	0.50 – 0.89
Satchuri National Park	3	3.00	0.50 – 1.94
Rema Kalenga Wildlife Sanctuary	4	4.71	0.78 – 2.02
Chunati Wildlife Sanctuary	5	5.38	0.65 – 1.91
Teknaf Wildlife Sanctuary	**5**	**6.96**	**0.74 – 2.49**

Annual indicator bird monitoring process received technical guidance from team including students from Jahanginagar University and Eco-Guides from the communities. Here members of the team cross a stream at Rema-Kalenga Wildlife Sanctuary. [Monirul H. Khan]

Linking Participatory Bird Monitoring to Eco-tourism

Bird monitoring requires that people be out in the forest observing nature. It was expected that local people would contribute their knowledge and gain new intimate local knowledge of forest ecosystems that could be harnessed for earning an income. The local participants in bird monitoring were trained to provide eco-guiding services, and so their interest in nature would be rewarded with an income.

Management Impacts in Five Protected Areas

The population density, i.e., the number of individuals per square kilometer was estimated for four years (2005 to 2008) for each indicator bird species in each of the five PAs (Figure 1 a-i). The density estimates revealed that two of the indicator birds (Red Junglefowl and Puff-throated Babbler), that live on the ground and in the understorey of the forest, had increased in population over the last four years (Figure 1 a and b). This suggests that the forest understorey has started regenerating, increasing the carrying capacity and nesting sites for these two species. The community patrolling, awareness and other components of co-management have reducing the clearing of understorey vegetation for firewood as well as reducing hunting pressure.

Chunati Wildlife Sanctuary was the only PA where White-crested Laughingthrush was recorded. Its density estimates increased in the second year, but decreased in the subsequent two years (Figure 1c). The density of the middle storey birds did not show any change over the four-year period (Figure 1d to f), nor was there any change for one upper storey bird - Hill Myna. However, the population density of Oriental Pied Hornbill declined (Figure 1h), it depends on large fruiting trees and cavities in large trees for nesting. This indicates that the removal of large canopy trees (through illegal felling) has continued to affect this key species in four PAs. Due to the absence of top canopy trees in Chunati Wildlife Sanctuary, the survey team did not find any Oriental Pied Hornbill there.

Figure 1: Changes in Population Density of Eight Indicator Bird Species
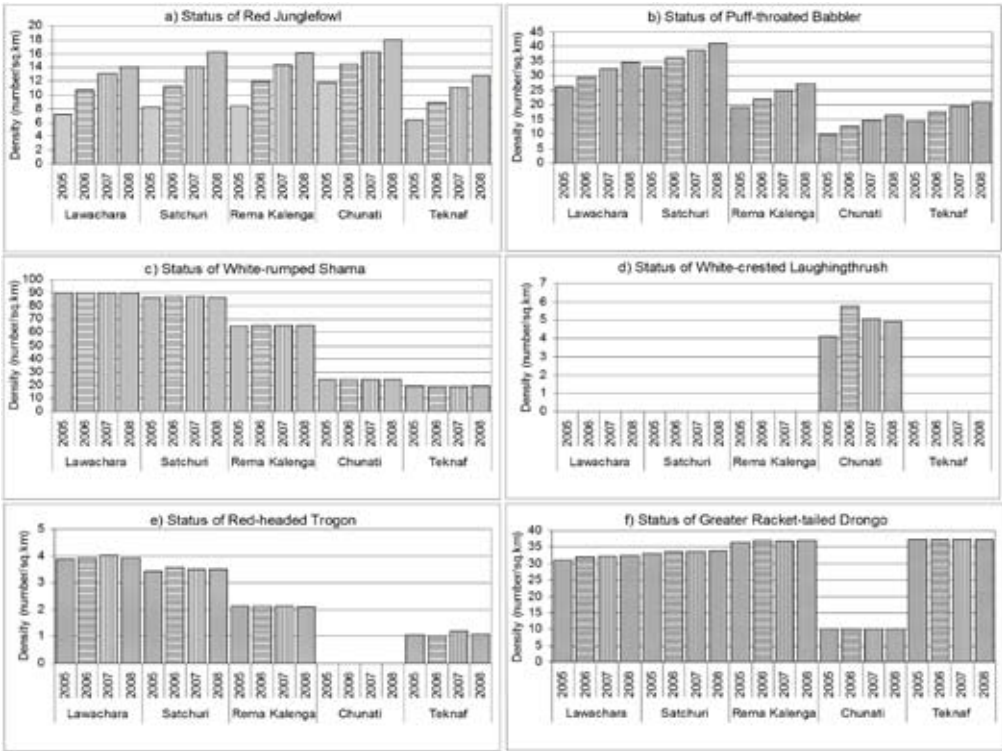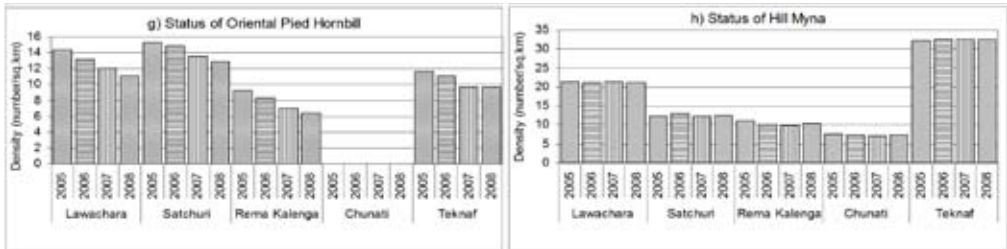
During the avian breeding season (February-August) in the four survey years (2005-2008), a total of 239 species of birds were recorded in five PAs, of which 189 were residents, 39 winter visitors, six summer visitors and five vagrants (Khan, 2008). Most (55%) of the birds were insectivorous., and more bird species occur in the middle canopy (42%) and on the ground (33%) (Khan, 2008). Most species of birds were considered to be relatively rare (35%) in 2008's survey and the proportion of species considered to be rare increased gradually over the four years (Khan, 2008). The total bird species (239) recorded in five NSP sites in a limited period of time represents 37% of the birds recorded in Bangladesh (Siddique et al. 2008), and about 17% of those recorded in South Asia (Grimmett et al. 1998). A relatively high proportion of rare birds (35%) emphasizes the need for continuous monitoring of birds and the immediate need to restore the ecological condition of forests.

Implementation of Participatory Bird Monitoring Activities

In addition to providing a baseline and replicable method of surveying these indicator species, each year the same local participants or newly trained ones conducted the survey at each of the PAs, and the outcome of the surveys were reviewed and discussed with the communities.

The Project also used information on these indicator species for environmental education and awareness raising. For example, this information was used to support a Bangladesh Scouts rally focused on bird conservation: the team worked with local Scout troops and schools to teach children about the indicator birds and their implications in terms of forest health. A simple color checklist of those birds was also developed for young people so that they could record these species when they visit the PAs.

Lessons Learned

Forest birds can be an effective tool for monitoring forest health. All the indicator birds are primarily forest birds, so a change in the condition of their preferred forest strata is likely to have an impact on their population densities. This is evident in these five PAs if we compare the respective densities with the conditions of the PAs. In the field it was very obvious that Chunati WS has very few trees, hence two of the eight indicator species (Oriental Pied Hornbill and Red-headed Trogon) were not recorded there, and the densities of three (Greater Racket-tailed Drongo, Hill Myna and Puff-throated Babbler) were the lowest. A strong correlation between forest condition and the density of indicator bird species was also shown in the three northeastern sites where the ecosystems and forest conditions are now similar (despite their

different histories) and the densities of all the indicator species were also similar despite differences in areas of the PAs.

The familiarity of selected indicator birds to the participating local population eased the process of using them for monitoring purposes. The selected eight birds for forest health monitoring were found to be more or less known to the surrounding community as well as the local eco-guides. Apart from two species (Puff-throated Babbler and Red-headed Trogon; and of course White-crested Laughingthrush which is absent in the northeast), the other species were very well known. Interestingly, when increasing or decreasing trends in population densities of the eight birds were discussed with surrounding communities and local Forest Department officials, they unanimously agreed that the Red Junglefowl has increased. A similar finding was reached in independent research at Teknaf GR on assessing local ecological knowledge of indicator birds (Karim 2008). However, that study concluded that when selecting ecological indicators, a variety of species (a mixture of birds, mammals and reptiles) that are suitable for monitoring could have been selected for greater interest and participation of the communities.

Birds can focus and sharpen mass communication about forest management interventions. As evidence began to appear in bird surveys about re-establishment of Red Junglefowl and Puff-throated Babbler, stories of such changes were picked up in the regional and national newspapers. In 2007 and 2008, multiple articles appeared focusing on the increase in bird populations, particularly in the northern PAs. News articles focused on the simple story of there being more birds of certain kinds, rather than the more subtle story of improvements to lower story vegetation within the PA. Tracking these birds proved thus to be an important contribution to the overall effort to communicate both the existence and the progress of the forest PA program at a national level.

Involvement of local eco-guides in the bird monitoring process did not add notably to eco-guide marketability to tourists. The Nishorgo eco-guides showed interest and actively participated in the bird surveys. However, in a country like Bangladesh, where the concept of eco-tourism is yet to established, the ecological knowledge gained by the eco-guides did not seem to make them more marketable to visiting tourists. The kind of mass tourists visiting the PAs have little exposure to ecology or to wildlife, and did not as a result express interest in learning such information through the eco-guides. Thus the guides were not able to enhance their income or marketability noticeably from their knowledge gained from the bird monitoring process.

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11
Policy and Legal Framework

Philip J. DeCosse, Ishtiaq U. Ahmad and Ram A. Sharma

The Nishorgo Support Project (NSP) aimed to pilot a co-management approach for select Protected Areas (PAs), while ensuring the sustainability of that pilot by facilitating changes in the policy and legal framework to be more explicitly supportive of co-management. The Project design identified the preparation and approval of PA management plans as a likely area of policy intervention, but deliberately did not identify other policy or legal changes, leaving leeway to the Project team to do so. With the Project underway in 2003, the team identified in its first work plan two immediate policy-oriented priorities: support to preparation of framework Government Project documents[1], and the undertaking of a visioning process for PA co-management with the Forest Department.

These two processes (the vision and the Government project paper preparation) would identify the specific policy and legal activities to be pursued by the Project. Although some other policy issues were added subsequently, policy activities generally remained close to the agenda set out in the first year.

Arrival kiosque at Satchuri National Park, redesigned in 2006 with ticket counter and store for arriving tourists. Confusion about the rights of CMO to benefit from sales inside PA boundaries remained an intractable policy issue through the project period. [Philip J. DeCosse]

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[1] In the Bangladeshi government investment process, official project documents such as the "Development Project Proforma (DPP)" are approved in concept by a committee chaired by the Prime Minister and in detail by the appropriate Minister, and in hence where they introduce new approaches can be considered to be equivalent to policy statements.

Policy and legal interventions supported by a project such as Nishorgo could take place in many ways, so a schematic understanding of the options for policy intervention in the Bangladesh context is worth noting. Here we include under the term "policy" any specific or set of possible actions called for or allowed by the Government in a written document formally approved by a representative of the Government acting in an official capacity. This is a broader definition than the understanding of "policy" in Bangladesh meaning very specifically a policy statement – such as the Forest Policy of 1979, and that of Merriam-Webster (2010) which defines policy as: "a high-level overall plan embracing the general goals and acceptable procedures especially of a governmental body". In the Bangladesh context, "policy" includes a wide range of policy or legal interventions that range from general policy directions to the detail of policy in implementation, most notably the following:

● Acts, laws, treaties and other legal documents: Formally approved by vote by the Jatiya Sangsad (parliament).

● Rules: Prepared by technical ministries under the framework of enabling legislation and reviewed by the Ministry of Law, but ultimately issued and signed by the concerned ministry. The Social Forestry Rules are one such example.

● Government Orders: Prepared at the ministerial or departmental level, signed by the relevant Minister, and published in the Government Gazette.

● Project Concept Papers (PCP): Brief concept papers prepared by departments and ministries as a precedent to later full project designs.

● Development Project Proforma (DPP): Detailed project design documents that follow on from a PCP and are approved by the relevant minister and by the Executive Committee of the National Economic Council (ECNEC), chaired by the Prime Minister.[2] The DPP provides the most detailed blueprint for what a given project will undertake. DPP budgets are fixed for the full project period and have some scope for revision. The objectives and activities detailed in a DPP are rarely changed at all, even when the DPP is modified.

● Minuted decisions of Project Steering Committees: Incorporation of a decision in the minutes of a formally constituted project steering committee (each government project has one) represents a statement of the Government's intentions or position, and thus represent a policy direction.

● Management plans: For the Reserve Forests, including the forest Protected Areas, management plans are prepared by the Forest Department and submitted for official approval by the Secretary of the Ministry of Environment and Forests (MoEF), and thereby define policy implementation in those areas.

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[2]   The government system distinguishes between project design documents for technical assistance projects and those for investment projects.

- Strategies, Action Plans and other Ministry-led policy processes: The Government undertakes strategic planning processes as and when needed, and these processes often result in action plans or strategic statements that imply a policy direction of the Government.

This chapter reviews the major policy and legal framework activities undertaken by the Project, identifying starting assumptions for each of them and subsequent adaptations made during the project life.

Two policy issues are not treated extensively here, as they have been covered in other chapters in this book. Those topics include PA management planning, and preparation of the Government Order creating Co-management Committees and Councils.

Starting Assumptions and Subsequent Adaptations

Nishorgo Vision 2010

Just after the Nishorgo effort began in 2003, the Project Coordinator at the Forest Department and the Chief of Party began a dialogue within the Forest Department about the future directions and challenges of PA management, and that dialogue culminated in an agreement to develop a vision for PA management. The team set a target date for achieving the vision of 2010, or two years after the planned project completion date. The process and outcome would later be called Nishorgo Vision 2010.

This Vision was completed in draft form in early 2004, and was subsequently refined and vetted. After many revisions, it was presented for validation to the 2nd Nishorgo Steering Committee on February 9, 2005. It was subsequently circulated under cover of a letter from the Chief Conservator to all officers of the Department.

The visioning process served a number of useful purposes, primarily in helping to set the Nishorgo Program as a departmental program rather than a project activity, but also in fixing a subset of operational priorities, and then communicating those priorities to persons involved with the program. The Vision included clear recognition, for example, that the Department would need to place a priority on formally engaging the ethnic minority communities living in and around PAs in the co-management process. The Vision also clearly stated that PA management without formal participation would not be a viable option for the Department, in light of the economic and political interests of those

A visioning process within the Forest Department in 2003 and early 2004 helped in clarifying constraints and goals of an FD program beyond the project period, captured in the document "Nishorgo Vision 2010."

communities, individuals and industries keen to take advantage of the resources within PAs. This element of the Vision – that participatory governance would be a necessary part of future PA management – contrasted somewhat with a more common view in the Department and the Ministry of Environment and Forests at the time: that with sufficient financial resources, the Department would not have need to formally open PA management to participation.

Although the visioning process deepened and broadened understanding of the complex challenges of the Department in undertaking PA management, its reach and impact was less extensive than expected. The Project Steering Committee formally validated the Vision but did not champion this Vision. In subsequent Steering Committee meetings after its acceptance, no member of the Committee referred to it, this alone being evidence of its limited uptake by Committee members.

Within the Forest Department, acceptance of the Vision suffered from the lower status accorded the Wildlife Circle, and more generally to Protected Areas themselves. Most of the Departmental staff saw wildlife lands as being outside the main business of the Department, and did not at the time believe that PA management, nor co-management of PAs, would become increasingly important to the Department in the future. That lack of urgency within the Department certainly contributed to a more limited impact than was intended of the visioning process and the Vision 2010 document itself.

It is difficult to judge the long-term impact of the Nishorgo Vision 2010. Although it was discussed widely within the Department, and was led and by the then-Project Coordinator, it was not widely recognized as a central policy document by most Departmental staff even a short time later. Nevertheless, the Vision assisted in focusing a number of critical senior staff on the PA management challenge, and helped in building support at that level for the co-management agenda.

Project Concept Paper (PCP) and Development Project Proforma (DPP)

The Government of Bangladesh requires every development project (whether Government- or donor-financed) to complete a detailed Project Concept Paper (PCP) and then, if the project is approved, a full project paper (Development Project Proforma, or DPP).[3] The detailed objectives, activities and outputs stated in these two documents determine what and how a project is implemented for the relevant Department and Ministry and those project beneficiaries and partners with whom a project works. The PCP or DPP may include specific mention of processes that deviate from normal Government operating procedures, but so long as they have been explicitly mentioned in these approved documents, they are normally allowed. The DPP in particular, once approved, becomes a blueprint for all activities under the project. Divisional Forest Officers (DFO) and divisional staff focus keenly on the budgets allocated to them in these documents, particularly for infrastructure development and forest plantation work. It was by reference to the PCP and later the DPP that Nishorgo was able to undertake a range of co-management activities that would not previously have been allowed on PA lands under FD authority.

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[3]　The exact names of these concept and full project documents have evolved over the years since 2003, but we use these two terms (PCP and DPP) to describe the concept and developmental phases of project design.

Unlike many development projects in Bangladesh, the Nishorgo PCP and DPP had not been finalized before the project started, and this gave a space for negotiation and refinement of the co-management concept and what it meant in implementation. In the first year and a half of the project, the Nishorgo team at the Forest Department spent many hours drafting and re-drafting the technical activities and – more importantly – detailed budgets for the PCP and DPP. The DPP was not in fact completed and approved until 2005, although the process was begun in 2003.

Until the co-management concepts and implementation arrangements were included in the DPP and PCP, the FD and MoEF staff would not accept that such an approach would be pursued on Forest Department lands. Indeed it was the explicit language about the co-management approach in the PCP and DPP that opened the doors for preparation of the subsequent government order (GO). Similarly, the PCP and DPP provided the starting point for subsequent proposals on entry fee sharing (see next section), other means of sharing forest benefits, and support to revisions in the Wildlife Act and other policy interventions. Thus, the PCP and DPP were effective in creating entry points for policy or regulatory interventions.

These benefits however did not come without considerable cost. The most significant cost of the DPP system in general is the rigidity it introduces into the planning process. With project activities and budgets set in great detail in year zero for the subsequent five years – and changeable only by formal and time-consuming project document revision and approval – the opportunities for adaptive management are constrained.

The PCP and DPP helped advance the new co-management approach at the PA level. This was particularly evident in the reactions of the co-management participants at the PA level. Circulated copies of relevant DPP excerpts – translated into Bangla – made it clearer to PA participants that the FD had indeed made a formal decision to test a participatory model for the PAs.

FD staff would refer to copies of these documents regularly for guidance on both budgets and activities to implement under the project. For the Forest Department staff, however, adherence to the text of these documents was somewhat more rigorous when it came to budget allocations than when it came to language about supporting participatory PA management. This hesitation to follow the letter of the DPP arose in particular with respect to the local financial benefits sharing proposed in the DPP. As we shall see in the next section, the PCP and DPP provided a sound basis for putting in place entry fee benefits sharing for the PAs, but hesitations and a lack of clarity on how to implement the benefits sharing concepts slowed implementation of those provisions.

Benefits Sharing: Protected Area (PA) Entry Fees

The central policy challenge of Nishorgo was to ensure that benefits from PAs could be shared with those community members engaged in protecting them. As Nishorgo began, the common assumption was that this would mean communities benefitting from access to project inputs, particularly with the assistance of micro-finance and complementary economic activities. This was generally the view of the FD and the MoEF, who talked at the time of using these resources to create opportunities for the poor to benefit, thus reducing pressure on forest resources.

But the Nishorgo team (in particular the Project Coordinator, Chief of Party and USAID staff) believed from the beginning that the more sustainable source of long-term benefits to co-management participants would come from the forests themselves, and in particular from non-consumptive forest benefits, the most important of which was potential entry fees. The DPP explicitly directed that entry fees would be shared with co-management stakeholders:

"Forest revenue generated from PA including PA entry fee will be retained locally and reinvested in PA management and local community development efforts according to modalities and terms worked out by co-management committees established for the targeted PAs." (Forest Department, 2005: 20)

Numerous sections in the same DPP provided a more general basis for sharing of benefits with co-management participants. DPP Objective 3 included this proposed Activity: "Develop rules or directives allowing diversion of revenue generated by the activities of Nishorgo Support Project to distribution among the stakeholders as a means of ensuring the long-term sustainability of the PA management program." (26) While DPP Objective 4 included this expected Outcome: "Local participants in co-management agreements for PAs will capture a portion of the financial and economic benefits from the PAs." (29)

In addition to the DPP text, the project team could make reference to the Social Forestry Rules as a precedent for direct sharing of benefits. Under those Rules participants receive a check for 45% of the value of timber felled from their plots at the time of auction, without the revenue being centrally collected and then redistributed.

With this groundwork laid down in the DPP, it should have been possible to get explicit policy approval and implement entry fee sharing in the PAs. But rapid approval was not forthcoming. From 2005 through 2009, the process of approving a policy to share PA entry fees went through multiple stages, with field implementation of the approved approach only taking place in 2009. The process of presenting and approving this critical policy framework for entry fees is reviewed in the remainder of this section.

The Logic and Case for Shared PA Entry Fees

The logic for sharing entry fees, and other proposed changes to the entry fee system, were grounded in the experience at the time from other countries, as cited in background memos and reports, where three broad trends were noted. A first trend included setting higher entry fees for foreigners than for nationals of the country in which the PA are found, while a second trend included the adjustment of entry fees to account for willingness to pay of visitors, costs of running the PA and the amenities provided at the PA.

A third trend saw more countries allowing communities to share directly in entry fee benefits. Two countries – Madagascar and Indonesia – were noted and discussed in particular as evidence of this trend. Madagascar adopted a formal policy requiring that 50 percent of PA entry fees be shared with the neighboring communities. From Indonesia, the co-management model tested at Bunaken National Park received particular attention for its relevance to Bangladesh. The Bunaken case has received international attention from researchers and conservationists, and the co-management model pursued there has won a number of international awards, including

the 2003 British Airways Tourism for Tomorrow Award, considered by many to be the most prestigious award in ecotourism.

These broad trends – the team pointed out in its background memos to the Steering Committee and the Secretary, MoEF – stood in contrast to the situation at the time in 2005 in Bangladesh.

PA Entry Fees in Bangladesh in 2005

In light of the high demand to visit forest areas, even where forests are not well maintained, reviewing entry fee policy was a priority. [Philip J. DeCosse]

A benchmark comparison undertaken by IRG at this time found that the PA entry fees in Bangladesh were lower than any of the eight countries included.[4] In 2005 the fees charged to enter select PAs in Bangladesh were:

- Bhawal National Park had a 6 Taka entry fee, or USD 0.09 (9 cents). At the time, Bhawal was receiving more than 100,000 visitors per year.

- Mirpur Botanical Gardens had a 5 Taka entry fee, or USD 0.075 (7.5 cents), with more than 1 million visitors per year.

- Dulahazara Safari Park and Sitakunda Eco-Park had entry fees of 10 Taka, or USD 0.12.

At the five Nishorgo pilot PAs, no entry fees at all were mandated or being collected. Indeed, the only other PAs at which fees were collected were the Sundarbans Reserve Forest and Sanctuaries, the Banshkhali Eco-Park (bordering Chunati Wildlife Sanctuary), and Sitakunda Eco-Park.

In all of these cases where fees were collected (other than the Sundarbans), the entry fee concession was leased out to a private firm based on an annual auction of those collection rights. The Government (Treasury) would receive the income from the annual auction payment, and anything else the concessionaire could earn on top of that represented profit. This leasing out of concessions for entry fee collection was managed by the Forest Department and overseen by the MoEF.

In 2006, only one willingness-to-pay study had been conducted within the PA system, for Bhawal National Park (Islam 2003). Based on interviews and economic analysis of 80 randomly selected households, she found that 74% of those interviewed were willing to pay 10-15 Taka given the current state of the PA, while 24% were willing to pay more. Based on

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[4]   Countries included in the benchmark comparison were Nicaragua, Costa Rica, Belize, Uganda, Tanzania, Kenya, Madagascar and the Seychelles. The lowest entry fee for nationals of the stated countries was 1USD (Madagascar), this being considerably higher than any of the entry fee levels then in place in the Bangladeshi PA. The lowest rate then being charged for foreign nationals was 4USD (Nicarague and Belize).

analysis of data in her report, the Nishorgo Team argued that an increase of 4 Taka beyond the actual Bhawal entry fee of 6 Taka would generate an estimated additional 4 lakh Taka (a little under USD 6,000) per year, with little dissatisfaction or loss of visitors. However, in that study 92% of respondents stated they were willing to pay more than Tk 15 if basic facilities were improved.

Rough estimates of visit costs were also made in support of higher entry fees. A visitor who goes from Dhaka to Srimongal to visit Lawachara National Park, it was argued, would have already expended considerable resources to get there and pay for a hotel (a minimum of 120 Tk for travel and 300 Tk per person for hotel, plus food). In light of the beauty of the forest and the services available there, it was considered unlikely that a visitor would object to payment of, say, 50 Taka to enter the PA.

Later in 2008 a Nishorgo study (Haque and Bakht 2008) estimated willingness-to-pay at the pilot Nishorgo sites and also estimated demand curves for PA visits, using data from visitors to Lawachara NP, Satchuri NP and Teknaf GR. The study found low average willingness-to-pay levels of 20 Taka for Lawachara NP (precisely the entry fee proposed in 2006), and about 15 Taka for Satchuri NP and Teknaf GR. In addition, they found notably different demand curves for the three PAs, and different responses in PA visitation with increased entry fee levels. Understanding the demand for individual PAs and responsiveness of visitors to entry fees provides a necessary base for greater segmentation within nature tourism and PA visits, and should be used to help in a more refined and differentiated PA pricing strategy in the coming years.

Initial Entry Fee Proposal in 2006

In spite of the foregoing logic and arguments for setting entry fees for Nishorgo pilot areas at a higher level than those charged for other sites of Forest Department, the Forest Department understood that, due to political sensitivities that might result from making entry fees "too high", no Bangladeshi entry fee level should exceed 20 Taka. Ultimately this perceived entry fee ceiling was a more significant determinant of the final proposed entry fee than any economic logic or studies.

The Forest Department made its first formal request for approval of a new entry fee policy at the fourth meeting of the Nishorgo Steering Committee on April 24, 2006. The proposal included entry fees for four PAs of 20 Taka for adults, 10 Taka for students and minors, and USD 5 for foreigners. Lower rates were proposed for Chunati Wildlife Sanctuary, at 10 Taka for adults, 5 Taka for students and minors, and USD 3 for foreigners, in recognition of the relatively poorer state of conservation of that Sanctuary. The presentation to the Steering Committee included the following wording for the proposed uses for collected entry fees:

● "Compensation to participants for losses in reduced extraction from PA (e.g., through community patrolling and initiation of other PA-related income-generating activities)

● Ensuring the PA remains attractive to visitors through cleaning activities and provision of services such as toilets (these expenditures not to exceed 10% of annual expenditures from fee funds)

- Printing of brochures and related materials that can generate income for the Committee and local people

- Reinvesting this money in PA-related activities that will generate additional funds for PA management

- Payment of basic operational costs for the secretarial and administrative support activities of the Committee."

At that same Steering Committee presentation, these were the proposed modalities for uses of the entry fee revenue, exactly as they were presented to the Committee:

- "A separate bank account will be maintained to manage the money

- Entry fee to be realized through a receipt and receipt books

- At end of each month, 50% of total realized revenue to be passed to the Government as forest revenue

- The Committee will prepare an annual plan for spending of the Fund and will take approval from the Co-Management Council and from respective DFO

- Monthly financial reports to be posted publicly and forwarded to DFO

- Each year the accounts statement will be audited by either an institution or person as directed by the Advisor of the Committee

- Fund will be managed jointly by ACF/Range Officer and Committee Treasurer

- Note that Government is not giving up any revenue in this proposal, since entry fee is new revenue".

The tone of this presentation highlighted the perceived concern that the Steering Committee would pay special attention to the need to maintain revenue from Government lands. The final highlighted and underlined phrase in the presentation makes this emphasis clear (it was underlined in the presentation to the Steering Committee also), and one can hardly overstate the importance that this revenue focus played in determining whether Co-Management Organizations (CMOs) should have access to a share of the entry fees as proposed in the DPP.

Indeed, at this 2006 presentation, the Forest Department's Project Coordinator determined that it was too risky even to explicitly state that half of the entry fees should be retained by the community. The primary objective of that presentation was to obtain support to proceed with preparation of modalities for the entry fee sharing.

Back and Forth in 2007 and a Specific Modalities Proposal

In late 2006 and again in early 2007, the FD, through the Ministry of Environment and Forests, made proposals to the Ministry of Finance that would both fix entry fees for the Nishorgo pilot

sites and allow for retention of 50% of those fees by Government-recognized CMOs. On both occasions, the Ministry of Finance issued orders to implement entry fees as requested, but ignored the issue of local retention.

Recognizing the importance of having communities receive half the entry fees at point of transaction – and without waiting a year for the money to go back through the central Treasury – the Nishorgo team did not accept these proposed solutions, and continued working instead for the proposed sharing at point-of-transaction as included in the DPP language. In light of the similar process of sharing revenues with beneficiaries in place for Social Forestry, the Nishorgo team calculated that this precedent and the need to directly benefit communities argued for continued efforts to obtain approval for the original proposal.

The Forest Department did not want to begin charging entry fees or undertaking other benefits sharing activities so long as none of the generated revenue would stay at the CMO level. The FD therefore did not implement the entry fee plan, as it continued efforts to obtain approval for benefits sharing.

In early March 2007, the Forest Department organized a briefing to the Advisor responsible for environment and forests (during the period of the caretaker government) concerning the entry fee retention issue. The Advisor was briefed about the problems that would arise if PA entry fees at co-managed sites were all returned to the Treasury for later distribution back to the CMOs. The briefing note highlighted the following four reasons for allowing revenue to be retained at the PA level:

(1) *The urgent need for co-management benefits to reach those directly involved in community patrolling and protection of forests.* The internal briefing memo noted that: "These community patrollers are generally among the poorest citizens in the country… [They] are too poor to wait a year before getting reimbursed."

(2) *Rapid growth in visitation and lag time in revenue return.* The number of visitors to the PA were rising rapidly, and the briefing noted that with a one year lag between collection of entry fees and return of half of those fees to the CMOs, the amount returned would not be sufficient to address the growing needs at the PA level.

(3) *Impact of delayed revenue return on provision of nature tourism services.* With such lag time and delays, the CMO incentive to provide support services to the PA would be compromised, and there would be a likely impact on the quality of PA conservation and management.

(4) *Discouragement of the new Co-Management Organizations.* The new procedures would require tight control by the Divisional Forest Officers (DFO), and this level of control might discourage the CMO from taking the leadership roles expected of them in the co-management Government Order and other policy instruments.

Between March and July, 2007, a number of additional efforts were made to make the case to allow entry fee revenue to be held at CMO level after collection, rather than being routed through the central Treasury and back through the FD. None of these efforts succeeded, and when, after an intervention at the level of the Joint Secretary, Ministry of Finance, the

modality for local retention was still not approved, the Nishorgo team decided to proceed and develop modalities for moving entry fees through the Government accounts and then back to communities.

To that end, a noted finance and accounting expert was engaged by Nishorgo to prepare the guidelines. By November a first draft had been prepared, and a final version of the guidelines was submitted to the Ministry of Environment and Forests by the FD at the end of 2007 (Rashid 2007).

Approval and Implementation during 2008 and 2009

The year 2008 saw the slow process of approving the entry fee retention guidelines, and also the initiation of entry fee collection at Nishorgo pilot PAs. The complexity of the collection process was much as the FD had predicted, and the time required to implement this contributed to waning interest and commitment of the CMOs during this period. Actual implementation of the entry fee collection and distribution process was not fully under way until 2009, after the end of the Nishorgo project.

Other Benefits Sharing Opportunities

In addition to entry fees, three other avenues were sought to modify the policy and regulatory framework to allow benefits sharing from the Nishorgo PAs:

(1) Allocation of social forestry plots within buffer zones to Nishorgo co-management stakeholders, with an emphasis on ensuring that recipients of such rights were those directly patrolling or protecting the PAs.

Design of tickets sold to Lawachara National Park, 2008. Entry fee sharing from these fees began later, in 2009.

(2) Permission for co-management stakeholders to undertake visitor or tourist service delivery within the boundaries of the PAs

(3) Permission for co-management stakeholders to take part in and benefit from forest management and restoration activities within the PAs.

Each of these proposed activities represented a departure from the status quo for PA management since they each implied a more direct role for beneficiaries to receive revenues in cash or in cand directly from government PA lands. A review of efforts to formalize these benefits sharing modalities follows here.

Access to Social Forestry Plots for Patrollers and Other Stakeholders

Financing for social forestry was included in the project from the beginning. Under social forestry procedures, selected beneficiaries are given a "Participatory Benefits Sharing Agreement (PBSA)" which formalizes the prescribed rights to benefit from a (usually) one hectare plot over a period of 10 years. The precise guideline for allocation of those social forestry plots under Nishorgo was not made explicit in the DPP. With the final approval of the DPP in 2005 the first round of social forestry plot allocation was set to take place when the rains fell in approximately May of 2006. Under standard social forestry allocation procedures beneficiaries are identified by FD staff and proposed to an Upazilla level social forestry committee for approval. While certain criteria are met in the process of choosing potential beneficiaries, FD staff have considerable leeway in who they propose. During that first year of implementation, the Project Coordinator sent instructions through Conservators and DFOs that social forestry agreements should go to those involved in patrolling and other direct conservation activities.

In the 2006 season, however, out of about 30 hectares of social forestry plots, few were allocated to groups directly engaged in forest protection or conservation work. One exception was a group of men from the Tripura community at Satchuri National Park, but their plots were allocated on Reserve Forest land some 2 kilometers from the PA due to lack of appropriate buffer land any closer. Clearly, the logic of allocating these important and valuable benefits to those directly involved in forest protection had not yet been fully implemented.

In response to the shortcomings in implementation that occurred in 2006, the Nishorgo team developed modalities for a "Participatory Conservation Benefits Sharing Agreement (PCBSA)". This proposal was modeled after the approved social forestry benefit allocation procedures then being formalized in the Social Forestry Rules, but included additional requirements intended to strengthen the link between receipt of the PCBSA and engagement in conservation work. Under the PCBSA model, social forestry plots would go to those directly involved in conservation activities, and would be predicated on the continued active involvement of those individuals or groups in ensuring conservation. It was thus a two part agreement: (1) social forestry plots outside the PA are allocated to patrollers or others directly involved in conservation; (2) in order to maintain the plots, the beneficiaries need to continue protecting the PA.

The PCBSA was written in both Bangla and English and was circulated to all DFOs for use at Nishorgo PAs. In order for it to have the strength of a formal and recognized procedure, it would need eventually to be included in an amended Social Forestry Rules. But in the interim, the FD Project Director circulated the PCBSA to all Nishorgo DFOs with a request that it be adopted for use in the 2007 allocation of social forestry plots. Extensive efforts were undertaken in the 2007 and 2008 allocations of PCBSAs to ensure that they went to those involved directly in the co-management and conservation process.

However, in spite of repeated orders by senior FD staff to allocate these benefits to co-management participants involved in conservation, the process was still not a standard part of FD PA management by 2008. This delay allocating social forestry plots to those co-management participants involved in patrolling and protection occurred for two principle reasons. First, the PCBSA did not have force of Government policy (DFOs often noted that in spite of the language of the PCBSA and the requests of the senior FD staff, they were not obligated to follow those requirements, since there had been no prior change to the Social Forestry Rules). Second, the authority of local FD staff members to allocate social forestry agreements to anyone of their choosing represents a significant power and opportunity. Under Nishorgo's PCBSA model, the agreements would automatically go to those already engaged in community patrolling and protection, removing the opportunity for FD staff to select beneficiaries themselves. This loss of authority made the PCBSA model less attractive to local FD staff.

One of the lessons from the process was that a formal change in power relations between local FD staff and communities would require an explicit policy and procedural basis. There existed sufficient hesitation and lack of understanding on the part of local FD staff that a more formal and specific requirement to implement social forestry through and with the CMO would be required. For this reason, work started later in 2008 on a revised set of social forestry rules.

Non-Forest Benefits Associated with the PA

In the same quest to ensure benefits for those directly conserving the PAs, the Nishorgo team also sought for CMOs to benefit from a number of non-consumptive economic activities associated with the PAs. In 2006 and 2007, the project tested such tourist-related visitor services as shops at PA entrances, management of student dormitories constructed by the project, and picnic site management at the edges of PAs. These services were put in place at all five PAs, although tourist service opportunities were less at Rema Kalenga Wildlife Sanctuary as it is relatively remote. In addition, community patrol groups were given access to management of fish ponds within PA boundaries at Teknaf GR and Satchuri NP.

In 2007, five of the eight CMOs requested Landscape Development Fund grants to construct permanent tourist shops structures at PA entrances. This proposal to construct permanent structures on PA lands opened up a debate within the FD about whether such benefits sharing should be allowed at all. The debate centered around the specific grounds for allowing non-government entities to make money from running business operations on
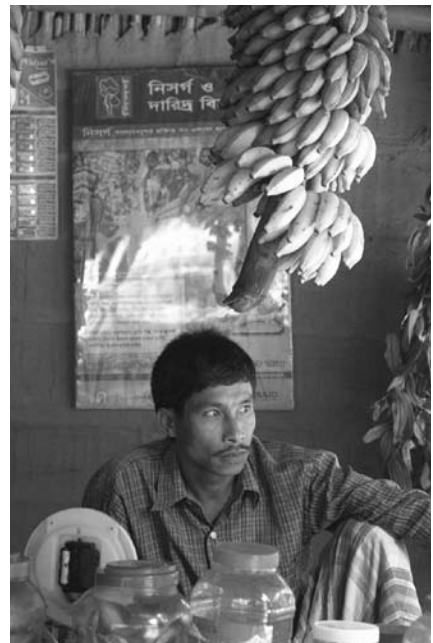
CMO requests to construct permanent stalls within the PA were not approved for lack of a policy framework. Temporary tea stalls operated by Community Patrol Groups, such as this one at Satchuri National Park, were later informally allowed to operate. [Sirajul Hossain]

government lands. The common understanding at the FD – and indeed among government staff in general – is that no revenue can be captured from government property that is not forwarded to the Treasury and accounted for as government revenue. In the case of the CMO-requested visitor kiosques, a private entity would be running a business on FD land without any financial benefit to the Treasury. Some in the debate accordingly argued that any exception to this standard practice would require explicit and formal declaration as policy, such as exists in the Social Forestry Rules for retention of revenue by social forestry beneficiaries. Per another argument in the debate, the force or authority of policy as stated in an approved DPP was not sufficient override this long-time revenue management policy of the government. In the end, the permanent tourist stall proposals were not pursued and were not constructed. (At the same time, at a few sites, non-permanent sales kiosques – typically made of rattan and bamboo – were still in operation. But FD staff felt that the approval of permanent, concrete structures required an additional level of authority.)

Although the tourist stalls were called into question, other tourist service operations and the fish ponds continued to operate and benefit communities. This continuity was achieved through the intervention and direct support of the FD's Project Coordinator and the then-CCF. Without their verbal encouragement to continue such initiatives with the CMOs, the Nishorgo experiment would have faced a serious setback.

CMOs have continued to benefit from such PA non-consumptive uses, but realization of opportunities for such benefits remains below the market potential. The CMOs are not yet confident that they can take new initiatives to improve service delivery, charge fees for such services and benefit from those actions. FD staff remain uncertain about the rules and

Operation of new student dormitories (here, at Teknaf) was another potential source of CMO revenue, but FD staff objected on policy grounds. These have also come under CMO management, but only by informal arrangement. [Philip J. DeCosse]

responsibilities that can be applied in allowing the CMOs to capture such benefits. So, for example, although the Minister and CCF opened a student dormitory with established overnight rates at the Teknaf Mochini site in 2008, the management roles for the dormitory between the FD and the CMO in that site remain unclear, and the dormitory by 2009 did not regularly receive visitors, in spite of it being in an excellent location.

The trials and errors in this area of benefit sharing highlighted the need for a more comprehensive policy or legal framework enshrining co-management and particularly the right of co-management participants to benefit from a full range of non-consumptive economic activities in PAs so long as conservation was ensured.

Participation in – and Benefits from – Habitat Restoration Activities

The third broad category of benefits sharing from PA lands concerned opportunities to gain from habitat restoration. Government approved management plans for the five PAs explicitly allowed stakeholders to benefit from any off-take related to normal forest management operations within the PAs. One specific benefit cited in the approved Nishorgo plan was "thinning operations". The benefits included both the employment opportunities that might be provided by the FD in conducting forest management activities and the biomass by-products resulting from such work (especially from bamboo thinning, a commonly prescribed operation), which could be kept by the participants after work was completed.

Progress in ensuring that CMOs – and particularly their patrol groups – benefitted from these opportunities ran into an important obstacle. FD staff at the PA level, and particularly the Range Officers (RO) that oversee habitat restoration or plantation work, had long-established processes for engaging workers in forest management operations. Communication between them and the new CMOs, and between RO and other members of the Nishorgo team, was not sufficient to persuade them to obtain their labor via the CMO rather than via prior established channels. This obstacle was to some extent overcome through management interventions. As the CMOs were made more were aware of their rights to take part in such decision-making, communication between FD staff and the CMOs became more regular, and such opportunities were more commonly directed to CMO-delegated groups, and especially the patrol groups.

Two specific proposals for benefit sharing from forest restoration, however, scarcely progressed. The first concerned CMO participation in habitat restoration through mixed long-and short-rotation species plantations. By 2008, the Project Coordinator recognized that large tracts of highly degraded forest such as those in Teknaf GR and Chunati WS would not be restored through FD-managed forest operations. The size of the degraded areas was too large and there existed no realistic opportunities for large-scale FD-financed and managed operations to restore those areas. At the time, the Nishorgo team began to make specific proposals by which costs could be reduced by engaging CMO-selected groups to undertake the restoration plantations within the PA boundaries.

Accordingly, the team prepared a restoration

Concrete plaque marks 20 hectare 2003 plantation of mixed native species within Chunati Wildlife Sanctuary. High per-hectare costs of these plantations inside the PA meant that only tiny portions of the PA system could benefit, leaving nearly all of Chunati untouched. Yet the policy framework does not allow communitiies in general or CMO in particular to benefit from assisting in PA restoration. [Philip J. DeCosse]

model under which slow growing native tree species would be interspersed with fast growing exotic trees. Communities would participate in tree planting and have the right to benefit after 10 years from harvesting the exotics while leaving the native trees untouched. In this way communities would directly participate in habitat restoration.

This proposal drew a number of important objections from participating FD staff. It was argued that while forest restoration operations could be pursued within a PA, no individual could benefit from any felling and revenue benefit on those lands without explicit approval. Again the logic for refusal to allow these activities was rooted in the understanding that nobody but the government could receive any benefits from forest land without explicit policy or legal language allowing them to do so.

Here too was an example of an activity consistent with the government approved management plan and consistent with the Government Order on CMOs, but which did not have its own extremely specific language in policy to support it. By 2009, work was under way developing new PA Rules that would allow CMOs to take part in benefit sharing from forest restoration in degraded areas of PAs.

In light of intense commercial demand for timber, innovative solutions were sought to reward those that could halt illegal felling. [Nishorgo Support Project]

One particularly sensitive potential area for benefits sharing from habitat restoration was informally proposed and discussed, but was never formally developed as a policy proposal, in spite of its recognized potential. The proposal called for community patrol groups within a select PA o be allowed benefits from controlled and limited felling of mature exotics such as teak under the condition that they had successfully protected the rest of the forest during a fixed period and would plant framework native trees in place of the exotics. Although it had been discussed earlier, this proposal was presented and discussed during the Co-Management Week in 2006 by an invited guest at the proceedings -- an eminent conservationist from Sri Lanka named Dr. Sarath Kotagama.

Dr. Kotagama reviewed the community patrolling work at Lawachara and noted its success, but went on to note:

> The Forest Department indicated that [it] does not intend replanting of the forest by exotic "teak" any more and was in the process of permitting the regeneration of the natural vegetation. Accordingly, it raises the issue of why guard something if it is not going to be part of the future system? The only reason why it should be guarded is to get better returns in the future, when the appreciation makes the value of the assets higher. […] In economic terms it will reach a point when even the patrolling staff may find the purpose less beneficial, and could turn a blind eye, or become party to the process of illegal logging (Kotagama 2006: 3)

He went on to wonder how a community patrol or even the Forest Department can be expected to protect an asset that is becoming increasingly valuable, but then proposed this solution:

> An alternate way to look at this is to plan to remove the trees over time, while reverting the forest to a regenerated forest of indigenous trees. While the trees are removed part of the earnings are plowed into a community fund. This fund will benefit the community beyond the removal of trees! The community can also be involved in the restoration (replanting, facilitating tree establishment through manipulations, etc.) and remuneration for restoration can be channeled to the community and the community fund. The ultimate would be to use the restoration as a means to bring back larger fauna and some unique plant assemblages and thus tourist attractions for eco-tourism (2006: 3).

The proposal, however, to allow CMOs to benefit from controlled removal and sale of exotic teak within Nishorgo PAs was not taken at the time considered a viable opportunity, principally because the idea of allowing CMOs to harvest teak from within the PAs – even if conducted in the context of a habitat restoration process – then raised a number of particularly difficult policy and practical challenges. Felling of mature hardwoods in the PA, even if done as part of a habitat restoration process, would have raised objections on the grounds of the Wildlife Act. And in addition, concerns were raised about the risks of opening the door to tree felling in the PA, and how that might result in an uncontrollable amount of felling of other trees. At the time, this particular policy proposal was too far advanced for the context, and did not develop.

Wildlife Act

From the first draft of the PCP prepared in early 2004, technical support to revise the Wildlife Act had been envisioned as a Project activity. It was included subsequently in the DPP in 2005. The leading impetus for revising the Act was the need to modify the CITES annexes to reflect current understanding of the species present in Bangladesh and the threat levels of those species. Additional impetus for revising the Act came from the need to regulate private zoos and export of wildlife, both of which had attracted the attention of the Wildlife Advisory Board.

The revision process was led by the Conservator of Forests (CF) responsible for the Wildlife Circle, and highlighted, in addition to the aforementioned areas, the need for modification of arrest powers of FD staff. Through 2005 and into 2006 the Nishorgo team worked closely with lawyers from the Bangladesh Environmental Lawyers Association (BELA) to propose modifications to the Act that would be consistent with the benefits sharing and governance elements of the co-management approach. No less than 20 revisions of the draft Act were written during this period.

The revision process was constrained from the start by a desire on the part of the Forest Department to ensure that no major changes were made to the Act, but rather that phrases and clauses would be modified so that the revised Act would be close to the original. The Department argued that passage of a modified Act would be much easier to obtain than proposing a fundamentally new act. Yet with all the proposed revisions, the draft Act by the end of 2006 included so many changes that the revised version was in any case effectively a new statute.

After a lull in work on the Act in 2007, it was reinvigorated in late 2007 – now under the Caretaker Government – again because of pressure to comply with CITES and update the species lists. Again in late 2007 participatory feedback was sought by the Department from academics and NGOs about the draft content. At that time, a Bangla translation was made of a final draft.

But the efforts in late 2007 again did not lead to the revised act being passed. Although the driving impetus came to meet CITES obligations, there were too many other elements governed by the Act that needed extensive revision, including the need to:

- Clarify the status of new terms such as Safari Park and Eco-Park, which had been used in the DPP and later for in naming newly created nature areas, but did not yet have any formalization in policy;

- Formalize the terms and constitution of CMOs already operating in Nishorgo PAs;

- Refine guidelines for the many new private zoos that had appeared throughout the country since the last revision of the Act;

- Clarify the role of the Wildlife Advisory Board established in the original Act, but with its authorities not well elaborated.

Revisions to the revised Act and its process of final approval has continued, and the revised Act is expected to be approved immanently.

Advisory Bodies and Policy Advocacy

The Wildlife Advisory Board – created under the Bangladesh Wildlife Act 1974 – was created under Chapter 4, Sections (1) and (2) of the Act, with the loosely defined powers granted there that: "The Bangladesh Wild Life Advisory Board shall perform such functions as the Government may assign to it."

At this public consultation and hearings on the draft Wildlife Act in 2008 at the Forest Department, Professor Anwarul Islam of Dhaka University speaks as invited guests from public and private sector listen. [Philip J. DeCosse]

Membership in the Board was governed by a notice published in the Government Gazette.

The Nishorgo team had assumed that the Board could be an effective platform for advancing the priority policy issues related to PA conservation and co-management. The Board is chaired by the Minister of Environment and Forests, with membership from multiple ministries and government institutions. Civil society is represented, with participation in meetings in 2004 through 2008 by IUCN-Bangladesh and the Federation of Environmental Journalists of Bangladesh (FEJB).

In the period 2004 through 2008, however, meetings of the Wildlife Advisory Board occurred rarely, and usually in response to a specific issue. Two major issues dominated the few meetings held in 2005 and 2006. The first of those issues was that of cross border trade in endangered species, with particular attention paid to whether Bangladesh was adhering to its CITES requirements. The second issue concerned the existence and management of private zoos. Central policy and institutional issues such as Government or community capacity for wildlife management, collaborative management or benefits sharing never formed part of any agenda for Board meetings.

During revisions of the Wildlife Act, the issue of how the Advisory Board might be modified to more effectively advocate for policy and institutional reform was discussed at length. One of the leading proposals at that time was to create Divisional-level Wildlife Advisory Boards for coordination at a level closer to PAs. It was proposed that the relevant DFOs be the Member Secretary of those Boards. Ultimately this was not included in the draft Act, but its proposal and discussion indicated the recognized need for decentralization of the policy making and review process.

In common with other development projects, the Nishorgo DPP specified a Steering Committee chaired by the Secretary, Ministry of the Environment and Forests, and including representatives – at a level not to be below that of Additional Secretary – from eleven concerned ministries and departments. The Nishorgo Steering Committee met seven times between its creation in late 2003 and the its final meeting under the Nishorgo Support Project on November 13, 2008.

Review of the minutes from the Steering Committee meetings shows the Nishorgo team introducing critical policy and programmatic developments throughout this period. Indeed critical ideas were introduced in early Steering Committee meetings (Nishorgo Vision at the second meeting on Feb 9, 2005; CMO structure and composition at the third meeting on Feb 28, 2006; and entry fees at the fourth meeting later in 2006).

The Committee heard these presentations and some discussions ensued. However, the Committee meetings generally were not able to provide the sort of consistent leadership in resolving policy or operations concerns that might have been expected.

Recognizing the shortcomings of policy coordination with the Steering Committee, the Nishorgo team sought closer relations with the Arannayk Foundation, a tropical forest conservation foundation created under the Societies Act with membership from civil society as well as the US and Bangladesh Governments. In light of the strong common interests of Arannayk Foundation and Nishorgo team for forest conservation and benefits sharing, it was thought that areas of common policy ground might be found that could be pursued jointly. Certainly, the two agendas of support to collaborative management and support to improve capacity of the Forest Department seemed to be common ground. However, in spite of good will and efforts on both sides, these attempts at joint advocacy were less successful that expected. Arannayk did by 2008 undertake a number of forest co-management activities, but its approach and policy agenda remained quite different from Nishorgo, and the relationship thus did not therefore prove to be effective at furthering the policy causes of Nishorgo.

Policies Relating to Brick Kilns

Brick kilns are found throughout the country, often in the immediate vicinity of Reserve Forests, including forest Protected Areas. Brick kiln owners claim to use coal to fire their kilns at these areas, but it is widely accepted that wood provides the primary source of energy. Consequently forests with brick kilns nearby are heavily degraded from fuel wood collection.

Laws are in place to ensure that brick kiln operation does not damage the country's forests. The Brick Burning (Control) Act, 1989 requires that no brick kilns be located within 3 kilometers of any Reserve Forest (including all forest PAs), and that if a kiln does not move from such a location, then its permit should be cancelled (Section 4(5)). This Act also notes that the use of any fuel wood in brick kilns is prohibited (Section 5), and that an officer appointed by the Deputy Commissioner should carry out inspections from time to time (Section 4(3)). Further, the Environmental Conservation Act, 1995 requires that brick kiln operations have an environmental certificate or permit.

These policies are widely circumvented. Brick kilns have been in operation in the immediate vicinity of Reserve Forests for many years, including at the two southern Nishorgo PAs, and have caused extensive damage. Brick kiln owners, however, are so well connected that challenging them on legal or policy grounds has appeared to be futile. Legal or regulatory action to close or move brick fields depends ultimately on the DC's office, so FD officers can do little to stop them, even when they are established within sight of a Reserve Forest.

In 2007 and 2008, the CMOs of Chunati WS and Whykeong (within the Teknaf GR) tried to raise this issue by sending letters to the DC's office requesting clarification of the validity of the permits of existing brick kilns. The CMOs were reluctant to take any open position against brickfields in light of the status and power of their owners and a fear of retribution. In part due to the social pressure associated with this process, one of the brick fields from Chunati WS closed down. But other than this closing, the CMOs were not able to use the policy framework to their advantage. Indeed, at Whykeong, the Chairman of the Co-Management Committee at the time was himself the owner of the brick field located immediately to the north of the PA, so that CMO was compromised in taking any forceful action.

The major English and Bangla daily newspapers have published numerous articles about brick kilns and their "flouting" of existing laws in relation to forest lands.[5] The Nishorgo team worked to convince the Secretary and the Advisor for environment (at the time of the Caretaker government) to nullify the permits of those brick fields operating next to Nishorgo PAs. But in spite of public advocacy, local pressure from the CMOs, and national-level pressure through environmental authorities, nearly all the brick fields remain in operation around the Nishorgo PAs.

The constraint is not one of gaps in policy. On the contrary, the policy framework is relatively well developed and clear for brick fields. Rather, the difficulty in changing the location of brick fields in the interests of forest conservation provides a stark reminder of the challenges

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[5]   For example an article on brick fields in the Chittagong Hill Tracts: "Big Shots Levelled Vast Terrain of Chittagong Hills", Daily Star, June 18, 2007; and the front page photo and caption from January, 2008 (shown in the text). Many similar articles were published during 2007 and 2008.

facing CMOs as they work to wrest greater control from those that have determined the use – or misuse – of PAs for decades.

Other Related Framework Biodiversity Conservation Policy and Legal Initiatives

Three other Nishorgo-relevant policy initiatives were undertaken between 2003 and 2008, and they are each instructive in understanding the evolution of conservation and co-management in Bangladesh. They were: the National Biodiversity Strategy and Action Plan process; development of a Wildlife Policy; and, the development of rules for management of Ecologically Critical

This front page photo from January 2008 included this caption: "Use of wood in brick kilns is prohibited by law. Yet this picture taken yesterday at Amin Bazaar shows woods being piled up for use in the kilns". Wood is commonly used to fire many brick kilns, and the kilns have been built next to Reserve Forests – including those at Nishorgo's southern sites – precisely to take advantage of the wood for firing.

Areas. Although the Nishorgo team did not lead or create any of these three initiatives, we recognized that each of them could have an influence on the policy and institutional framework for collaborative management of PAs, and it was thus deemed important to engage in the processes as much as feasible.

The National Biodiversity Strategy and Action Plan (NBSAP) process began in late 2002, and was coordinated by IUCN Bangladesh in support of the Ministry of the Environment and Forests. The NBSAP process followed on from the outcomes of previous World Conservation Congresses, with similar efforts undertaken in other countries. The objective was to put in place a coherent policy framework for biodiversity conservation across the multiple programmatic areas and institutions pertinent to biodiversity. The NBSAP was presented at a "First National Workshop" in October 2003 and then a follow up workshop in March 2004. Leading outcomes of that process included a call for a high level board that would have authority to address biodiversity issues across multiple sectors and ministries and preparation of a parent law on biodiversity. Neither of these two broad priorities was pursued after completion of the NBSAP process in 2004.

One characteristics of the NBSAP process was particularly relevant and telling: there was no mention of citizen collaboration in PA management – or "collaborative management" -- anywhere in the NBSAP final report. The lack of explicit mention of participatory PA management, or co-management, was telling for the Nishorgo team as a sign of how much had to be done to advance such ideas.

In 2005, the Ministry of Environment and Forests, with minimal involvement of the Forest Department, began to prepare a new "Wildlife Policy" that was in some measure to be a follow

up to the need for a unified biodiversity policy framework called for in the NBSAP. Again, a number of recommendations came forward, particularly the need to create a new "Department of Wildlife Conservation". The draft policy, prepared in Bangla and circulated widely, was never adopted by the Government. But it is interesting that it too, like the NBSAP documents, made no mention of participatory PA management, or co-management. Indeed, the idea and words "Protected Area" were not even included in the document. It did propose, however, that the management of wildlife should be taken away from the Forest Department and put into the hands of a proposed Department of Wildlife Conservation.

The Nishorgo team engaged in these proposals for a new Department with particular energy. The team argued that creating a new organization as a solution to conserving wildlife would create more confusion than help. By 2007, the Wildlife Policy after its multiple drafts was put aside and was not subsequently supported by the Ministry of Environment and Forests. Its debate and discussion between 2005 and 2007, however, contributed to mixed signals and confusion in the area of biodiversity conservation.

Nishorgo also closely tracked and participated in proposed regulatory development under the 1995 Environmental Conservation Act, which empowered the newly formed Department of the Environment (DoE) to declare areas as "Ecologically Critical Areas" (ECAs) over which the Department would have authority to take steps for their protection. Having designated ECAs the DoE has undertaken the GEF-financed Coastal and Wetland Biodiversity and Management Project (CWBMP) from early 2003 through 2009. CWBMP was designed to create participatory collaborative management regimes and supporting management interventions for four of the ECAs.

As the CWBMP progressed, it became increasingly clear that the project suffered from not having any specific legislation or policy to support it. One particular concern was the lack of a specific mandate for conducting field operations in the ECAs, and the human capacity to implement such a mandate. Although the 1995 Act established both the DoE and the framework for ECAs, the set up of the DoE focused on pollution management and environmental regulation, and it lacked field-based staff experienced in PA management.

In light of shortcomings in the policy and legal framework for DoE management of ECAs, the CWBMP commissioned a team in 2008, to be led by the Bangladesh Environmental Lawyers' Association (BELA), to propose draft ECA Rules. The draft ECA Rules a called for Management Plans to be prepared once ECAs were declared. The draft Rules also required that all declared ECAs would be managed by a newly created Environment Cell within the DoE. In addition, the draft Rules called for designation of "core zones", "buffer zones" and "multiple use zones" in each ECA. In essence, the draft Rules were calling for creation of a new PA management organization within the DoE. The ability of the DoE to implement such PA management was constrained by its lack of formal management authority over ECA lands. In each ECA, the lands are some mixture of private lands and public lands under various ministries. For example in Sonadia Island ECA there is Forest Department land and in wetlands such as, Hakaluki Haor ECA the permanent water is under the jurisdiction of the Ministry of Land. Hence the DoE's authority to actually implement conservation management and planning in ECAs was and is unclear.

While ECAs are clearly a different type of conservation area from Forest Department PAs, the ECA Rules development process highlighted increasing sophistication and development of language about conservation area management. That it should now be openly used to propose terms such as buffer zones, multiple use zones, and PA management plans made it clear that an increasingly sophisticated policy context was developing in which PA management issues could be discussed.

Lessons Learned

A number of lessons emerge from work in support of policy and legal frameworks for co-management, as follows.

Early work to establish a common vision through the Nishorgo Vision process proved a constructive means of fixing goals for the biodiversity program with a select group of forward-thinking members of the Forest Department. The Vision was not, however, widely cited or referred to as the official policy of the Department, even though it had been validated by the Nishorgo Steering Committee. While the Vision did not succeed in formally establishing a policy grounding for co-management, the process helped in crystallizing understanding within the Department, and with co-management partners, of the policy and institutional agenda being advanced by the Department.

The PCP and DPP contents are considered to be policy so long as those proposed policies do not challenge the status quo too abruptly or conflict with policies in other sectors, as was the case with the DPP language about sharing entry fee benefits. The Government's PCP and DPP documents are derived from bilateral agreements and project contracts established between the Government of Bangladesh and USAID, but the PCD and DPP lag one to two years behind the project contract, and this delay creates delays and challenges in project implementation. The PCP and DPP are considered – by the Government staff at least – the only valid project documents. For Nishorgo – and this is not uncommon – the DPP was approved nearly a year and a half after Nishorgo began. And, although DPP are taken seriously as policy for non-controversial issues (such as creation of CMOs), elements of the DPP may not be accepted as policy if they conflict with other regulations. In the case of Nishorgo, the technical ministry (Environment and Forests) approved the DPP although the Ministry of Finance later rejected the community-level revenue retention proposals included there on the grounds that the Constitution explicitly forbade local revenue retention.

The project team underestimated the strength of opposition to any change in revenue capture processes associated with Government lands and resources. What was considered strong policy language in the DPP was not sufficient to change the strongly held notion that no revenue could be generated from Government lands that would not be forwarded to the central Treasury. The example of the social forestry policy (where benefits are shared at the time of transaction) notwithstanding, the Nishorgo team was unable to succeed in direct sharing of revenue from PAs with the co-managers that were helping to protect the PAs. With hindsight, a considerably stronger advocacy effort would have been required to obtain passage of the desired revenue sharing targets, which would have called for a greater staff allocation, and the existence of an advocacy body (or bodies) independent of the FD and the Nishorgo Support Project.

Although economic studies had concluded that greater variation of entry fee by PA and by visitor type could lead to increased total earnings from the PA fee, political considerations proved more important in determining final entry fee levels. Entry fees could and should be adjusted in the future to account for variation in services delivered at each PA. Studies using willingness-to-pay methods and travel cost methods both concluded that entry fees could be increased at select PA with a resulting increase in PA revenue from those sites. As the number of visitors continues to increase at high profile sites with better visitor facilities, increased entry fees should be considered at least as a means of controlling visitor numbers.

A widely held understanding that amongst government officers that neither individuals nor organizations can derive direct economic from forest PA lands slowed revenue-sharing pilot efforts. Although gradual progress on allowing shared PA entry fees, much less progress on sharing of benefits from other non-consumptive uses of forests (tourist stalls and student dormitories) and forest management benefits (habitat restoration work). Legitimate concerns about lack of precedent for such benefits sharing arrangements in the Bangladesh system contributed to the hesitation to implement such ideas on PA lands.

It became gradually clearer that the institutional landscape in which PA-related policies are advanced suffered from a lack of independent, objective and strongly voiced non-government opinions from civil society. There is no shortage of passion for nature conservation in Bangladesh, yet there was during 2003-2009 a notable lack of independent non-government organizations dedicated to the cause of PA conservation and management.

Evidence of the lack of such organizations emerged in 2006 when an environmental impact assessment (EIA) was being reviewed for an energy investment within one of the PA. Although many individuals and organizations raised concerns in private dialogue about the investment, only one non-government organization openly and publicly questioned the process or its impact on the PA. In this case, as in many cases subsequently, the policy and advocacy context for PA management lacked a strong and independent set of voices standing up for PA conservation.

But throughout the period of Nishorgo's implementation, forest PA policy issues were advanced principally through the direct work of the Forest Department and with support of the Nishorgo Support Project team. In the long run, PA co-management will not succeed unless it is supported by a broader coalition including interested and vocal organizations and individuals within civil society. The Nishorgo team might have recognized this earlier and pushed to support such independent voices earlier in the initiative. But certainly, without such organizations in the future, it will be difficult to imagine that the necessary policy framework and substantive legal and policy changes required will take shape.

The most important advocate for significant policy change in PA management is the unified voice of local communities as PA co-managers. CMOs were established for forest PAs during Nishorgo, building upon the community based co-management organizations established earlier by MACH and other fisheries projects. As these organizations become stronger under ongoing and future initiatives, it will be essential they develop strong and national organizational structures to speak from their own perspectives and needs. Without an increasingly strong voice from community based organizations and CMOs, then the range and force of policy changes will not take place.

Revision of the Wildlife Act has been slowed by lack of broad consensus for change. In order to be made current with the wide array of global and national PA management issues – including benefits sharing and co-management, to name two – the nearly 40 year old initial Act would best be re-drafted as a new Act covering wildlife and PA management. Yet there was no consensus for a new Act during Nishorgo's period of implementation, and so the FD and the Nishorgo team focused on support to revision of the existing version. Although the Act's revisions progressed slowly and haltingly during throughout the period of Nishorgo's implementation, work nevertheless continued, and the draft revisions of the Act continued to include language formalizing the co-management process and benefits sharing principles.[6]

Conclusions

During the period after 2003, a number of significant policy and institutional changes were initiated or furthered in support of PA co-management. The principle was proposed, debated and advanced that revenues – in cash and in kind – from co-management PAs should be shared with those individuals that were working to protect and conserve the PA. This principle became most specific and applied in the case of PA entry fees, for which approval was received to share 50 percent of them with CMO at all pilot sites. Benefits sharing from sylvicultural operations within PA also became more common. But progress was slow in the area of formally agreed up sharing of other revenue benefits generated from FD lands, whether for mixed rotation plantations on degraded core zone land or non-consumptive tourism-related enterprises.

At a broader level, the PA co-management process being supported by Nishorgo faced policy constraints that were beyond the manageable interest and reach of the project team working under FD leadership. Although CMO could – and did – take actions against brick field owners and other threatening interests, the policy framework, and the enforcement of that policy, was generally beyond the reach or capacity of the CMO and the Nishorgo team. As it goes to a broader scale of implementation, and as Bangladesh's already rich, diverse and nature-loving civil society leaders recognize the importance of a secure PA system, it is reasonable to think that a consensus for more dramatic policy change in support of PA co-management will take place.

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Elements of Co-Management: Alternative Incentives and Incomes

Kaptai
[Nishorgo Support Project]

Approach to Stimulation of Alternative Economic Incentives

Philip J. DeCosse

Surveys undertaken at the beginning of the Nishorgo Support Project (NSP) showed that 300,000 people were then living in the immediate vicinity of the five pilot Protected Areas (PA), and that over 80 percent of this population could be categorized as "poor or "ultra poor" following Government of Bangladesh definitions (Mollah 2004a-e). Given this large number of inhabitants in the immediate vicinity of the five target PAs, the Nishorgo effort would need to be careful and targeted in its use of resources to stimulate alternative economic opportunities.

The purpose of this chapter is to explain the logic of Nishorgo's strategy for introducing economic interventions in ways that would be consistent with biodiversity conservation.

Options for Economic Interventions

The Government of Bangladesh Development Project Proforma (DPP), drafted in 2004 and approved in 2005, fixed the Government-sanctioned activities that would be financed under Nishorgo (Forest Department 2005). The DPP, though supported through contributions of the Nishorgo Support Project, was an output of the Government, and in this sense reflected the Government's priorities. The Nishorgo DPP called for introduction of microfinance as the principal strategy for provision of alternative income opportunities in and around the PAs. That such a high priority was given to microfinance provision as a core strategy for livelihood improvement is not surprising in light of the broad use of microfinance by Bangladesh's leading NGOs. Indeed, the enormous success in Bangladesh of microfinance institutions (MFI) – notably Grameen Bank, BRAC, and many other NGOs – has raised the profile and importance of microfinance.

Even at the earliest stages of Nishorgo team formation in 2004, it was assumed by partner NGOs and Forest Department participants that economic interventions would focus principally on the use of microfinance to accompany new economic activities. The field staff of partner NGOs were eager to start by adopting a familiar approach: forming groups that would receive microcredit, and then making these groups the primary participants in the biodiversity conservation process.

Offering microfinance to project beneficiaries has become a central feature of the way NGOs work in Bangladesh. Not only had leading Bangladeshi NGOs (e.g., BRAC, Grameen) demonstrated the potential of microfinance at creating new opportunities for households, they had also demonstrated the extent to which microfinance could contribute to the longevity of the NGOs themselves. NGOs that receive microfinance from donor organizations can then finance their own operational costs for years to come, even as they win new projects. It is not surprising then that Bangladeshi NGOs in recent decades have placed a relatively greater emphasis on economic activities and a lesser emphasis on governance, advocacy and empowerment activities (Feldman: 2003).

Rapid growth in nature tourism -- evident in this lineup of buses at Lawachara -- represented an economic incentive but also an important risk to be managed. [Nishorgo Support Project]

In light of the interest and attention given to microfinance, the Nishorgo team made the decision to avoid commitment to a microfinance strategy, at least until co-management governance formation and other social mobilization activities could evolve. The team feared that a microfinance emphasis would crowd out interest in other economic development opportunities that might not require microfinance.

At an early stage, the Nishorgo team commissioned three studies to deepen its understanding of available options for economic interventions. Technical experts from the USAID JOBS/Iris project undertook an assessment of low, medium, and high priority value chain interventions (JOBS 2004). At the same time, Nishorgo partner NGOs (Community Development Chittagong, or CODEC, and Rangpur Dinajpur Rural Services, or RDRS) responsible for field level activities respectively in the south and the northeast were asked to develop a plausible list of the high priority household or group level "alternative income generation" (AIG) interventions. In addition, with co-financing from German Technical Co-operation (Deutsche Gesellschaft für Internationale Zusammenarbeit or GIZ), the Nishorgo team reviewed the options for intervening in alternative and renewable energy supply in ways that would create new economic opportunities and also reduce biomass dependence on the neighboring forests (Prokaushali Sangsad Ltd 2005). Based on these assessments, plus the team's knowledge of other viable economic opportunities, 10 broad categories of potential economic interventions were identified:

1) *Developing nurseries:* This included establishing nurseries of indigenous and fast growing trees in local demand. The sale of saplings was already well established in local markets with much of the demand from local people wanting trees in their homesteads.

2) *Participatory plantations and assisted natural regeneration:* This involved directing responsibilities and benefits to local people for existing and new buffer plantations and strip plantations, located on PA land and public (khas) land respectively.

3) *Community patrolling and protection:* Because of the heavy pressure on forests in the PAs it became clear early on that a special cadre of community members would need to be directly engaged in protecting forests. Although the form of benefit for these patrollers varied, it was generally agreed that this would be explicitly remunerated employment, either in kind or in cash, because patrol groups would come from among the poor who depended on the nearby forests for their subsistence, and because patrolling would involve a significant amount of their time.

4) *Household income generation initiatives:* The interventions included a standard package that NGOs had delivered via their group-based microfinance activities in other parts of the country. These interventions, generally referred to by NGOs as "AIG," were areas in which the partner NGOs already possessed considerable expertise, at least at the level of introducing the technologies to group members and households.

5) *Nature tourism enterprises:* The Nishorgo team recognized early on that support to biodiversity-linked micro-enterprise development associated with nature tourism would be a likely part of the project's activities. The favorable impacts of eco-tourism on local community development have been recognized internationally. However, a cautious approach was needed as biodiversity conservation could not be compromised in the process of eco-tourism development.

6) *Branding and market value chain:* The project team planned to select one or more value chains for intervention as recommended by the JOBS/Iris study (2005). One such intervention was in the development of a value chain focused on the ethnic cloth production of the Tripura and Rakhaine people at the northern and southern sites respectively. Later it was decided to add an additional value chain linking bamboo nursery development, bamboo clump management, bamboo products development, and their marketing.

7) *Carbon sequestration financing:* By the second year of the project, the Nishorgo team decided to package and attempt to sell a carbon sequestration project at Chunati Wildlife Sanctuary. The considerable potential of Chunati WS to sequester carbon through reforestation and natural regeneration represented an important potential sustained financing opportunity for the Co-Management Organization (CMO) and the local population.

8) *Capital grants to communities:* Throughout its economic intervention activities, the Nishorgo Support Project attempted to work closely with the CMOs. But in spite of such cooperation, most alternative incentive activities were delivered directly by the Nishorgo team to targeted beneficiaries. The team recognized, however, that some interventions to support economic livelihoods should come directly from the CMOs themselves without any Nishorgo Support Project personnel as

Investments that would provide benefits to a large proportion of the population were assumed to generate more broad-based support for the program. Here, an access road at Dolubari village near LNP [Tareq Murshed]

intermediaries. Accordingly, a "Landscape Development Fund" was put at the disposal of the eight CMOs as a means of designing and implementing projects.

9) *Microfinance facilitation:* After consideration, the Nishorgo team decided not to directly deliver microfinance to stakeholders around the PAs. The team did, however, work to leverage existing microfinance providers to support deserving households. Nishorgo partner NGOs were encouraged to include project villages under their existing microcredit programs.

10) *Fuel wood consumption and energy technology:* Nearly all households living around the pilot PAs used fuel wood from the nearby forests for their household cooking needs. The potential to simultaneously reduce household energy costs and reduce pressure on forests compelled the team to explore options for modifying household energy usage. It was assumed that such economic and technical interventions might be executed in a way that would provide new economic opportunities.

Considerations and Criteria in Prioritizing Interventions

From across these potential economic interventions, the Nishorgo team needed to identify a manageable mix of income generation interventions to pursue. In making those choices, a number of considerations and guiding criteria were kept in mind. Each type of intervention was assessed against a basic set of criteria developed from field experience and lessons learned from other countries, as included notably in Salafsky and Margoulis (1999), Salafsky and Wollenberg (2000), and Wells and McShane (2004).

The first and most elemental criteria was the simple approach of "doing no harm." The Nishorgo team explicitly reviewed new proposals with this criterion in mind and rejected any that were likely to have negative impacts on the PAs. A number of interventions had been proposed that had a high probability of causing lasting damage to the PAs. One good example of this was the cultivation of orchids. The climate and forest conditions at the northern PAs – and particularly Lawachara National Park – make it an ideal area for orchid growth. In the rainy season, wild orchids cascade from the trees in Lawachara NP, and these orchids provide one important attraction of the forest. Already, though, wild orchids were being illegally extracted from Lawachara NP. A proposal was made for ex situ cultivation of orchids in the immediate area. It was clear, however, that the likely result of this market development would have been increased extraction of wild orchids. Taking (stealing) orchids for free from the wild would have been less costly than cultivating them, so the idea was almost sure to do harm to the National Park and its forest. Similarly, promotion of goat rearing was discarded since it was likely to have a negative impact on forest regeneration, a likely result of increased goat grazing within PA boundaries.

Four screening questions, or criteria, were used to assess potential additional economic interventions:

1) *Does the sustained success of a given economic activity require that the PA remain well-conserved?* Most standard household or group interventions were initially suggested

to augment the income of beneficiaries without investigating either positive or negative impacts on the nearby PA. Chicken or cow rearing, tending vegetable gardens, and other such interventions can no doubt contribute to the welfare of beneficiaries. But the team also focused on whether the proposed activity would be put at risk if the PA was degraded.

Rickshaw drivers were trained as nature guides for tourists on the west side of Chunati Wildlife Sanctuary, where rickshaws commonly carry tourists into the Banshkali area. [Philip J. DeCosse]

2) *When would the economic activity be likely to demonstrate visible impact and generate positive returns for participants?* In light of the high incidence of poverty amongst target beneficiaries, the team would need to ensure that many of the interventions would provide positive and visible economic returns within a one year time horizon. And yet it was recognized that the benefits from some of the most important interventions – particularly participatory forest management – would only accrue after several years.

3) *What is the likelihood of the economic activity being sustained and growing independent of project support?* Some of the potential interventions were more likely than others to be replicated, independent of the Nishorgo team's presence. Where interventions were made in existing products, services, and value chains, it was believed that the likelihood for sustained replication independent of project financing would be greater.

4) *To what extent would participants in the new economic activity associate that activity with the support of their Co-Management Organizations?* An important consideration revolved around the perceived role of CMOs in supporting economic interventions. The team intended for participants to recognize new economic opportunities as supported by or even initiated through the conservation efforts of the CMOs. To the extent that participants recognized the contribution of their CMO in providing economic opportunities, the overall goals of the CMO – conservation of the PA – would be more effectively achieved. This criterion was proposed because of an observed risk that some NGO field staff might introduce new AIG opportunities as though it were being done through the benevolence of their NGO rather than through any association with the CMO and conservation.

The range of possible interventions in the Nishorgo pilot sites were regularly weighed against these criteria. The outcomes of the review process are summarized in the following table, with the second-to-last column indicating whether or not the intervention was pursued by the project.

Evaluation of Proposed Economic Interventions

General type of economic intervention	Examples of specific interventions	Criteria				If imple-mented	Note
		Dependence of the activity on sustaining conservation	Timing of visible economic impact	Likelihood of value chain linkages and replication	Potential status benefits for CMO		
Tree nurseries	Nursery enterprises	Medium	Short-term	Strong	Weak	Yes	
Participatory plantations and forest management	Buffer zone social forestry	Strong	Medium-term	Strong	Strong	Yes	Participants had to take on protection obligations in return for plantation rights.
	Buffer zone medicinal plants	Strong	Long-term	Medium	Strong	No	Limited understanding of medicinal plants value chain.
	Habitat restoration plantations with thinning	Strong	Long-term	Medium	Strong	No	After long debate, not permitted by the Government.
Community patrolling	Direct in-cash or in-kind payments to patrollers	Strong	Short-term	Strong	Strong	Yes	
Household / group income generation	Beef cow fattening	Weak	Short-term	Small	Weak	Yes	Little/no risk of grazing in the PAs.
	Milk cow rearing	Weak	Short-term	Small	Weak	Yes	Little/no risk of grazing in the PAs.
	Poultry rearing	Weak	Short-term	Small	Weak	Yes	
	Nursery	Strong	Short-term	Medium	Weak	Yes	Saplings would be sold in local market and for plantations.
	Low cost tree sapling distribution	Strong	Long-term	Small	Strong	Yes	Tree saplings were sold to thousands of households in buffer areas for future fuel wood or timber needs.
Nature tourism	Nature tourism eco-cottage	Strong	Medium-term	Strong	Medium	Yes	
	Eco-guiding	Strong	Short-term	Strong	Strong	Yes	
	Service enterprises in the PAs	Strong	Short-term	Strong	Strong	Yes	Includes sales concessions. Not yet approved by Government.
	Elephant rides	Strong	Medium-term	Strong	Strong	Yes	

General type of economic intervention	Examples of specific interventions	Criteria				If imple-mented	Note
		Dependence of the activity on sustaining conservation	Timing of visible economic impact	Likelihood of value chain linkages and replication	Potential status benefits for CMO		
Branding and value chain	Ethnic branded cloth products	Strong	Short-term	Strong	Medium	Yes	Became the "Tripura Gift Collection."
	Date/palm leaf baskets	Medium	Medium-term	Medium	Medium	No	Not pursued because staff resources limited.
	Bamboo cultivation / processing	Medium	Short- to medium term	Strong	Medium	Yes	
Carbon sequestration financing	Chunati carbon project	Strong	Long-term	N/A	Strong	Yes	Project documents completed but awaits financing.
Capital grants to communities	Access to capital via Landscape Development Fund	Medium	Short-term	N/.A	Strong	Yes	
Access to capital - microfinance facilitation	Linkages to existing MFIs	Small	Short- to medium-term	N/A	Small	Yes	
	CMO led microfinance	Strong	Long-term	N/.A	Strong	No	CMOs were not institutionally strong enough to manage microfinance.
Fuel wood reducing technologies and markets	Improved stoves installation enterprises	Strong	Short-term	Medium	Weak	Yes	
	Biogas plants	Strong	Short-term	Small	Medium	Yes	Implemented only at two madrasah

Note: Categories used: Short-term defined as within 1 year; Medium term defined as 1 < x years < 3 years; Long-term defined as greater than 3 years.

Lessons Learned from the Process of Selecting Project-Supported Economic Interventions

Specific lessons were learned from each of those intervention areas, and those lessons are summarized here and reviewed in greater detail in subsequent chapters:

Where possible, select interventions that raise the status of Co-Management Organizations (CMO). Investments made through the Landscape Development Fund (LDF) became

increasingly important, not so much because of the size or impact of this investments, but because they raised the stature, recognition and skills of the CMO themselves. LDF investments focused principally on activities that could affect a large portion of the local population. Common investments identified by the CMO included libraries, access roadways, pond development for aquaculture, small bridges, rural roads, and community plantations. Each of these investments was clearly marked as a gift of the CMO to the people of the area, and in this way was a means of associating the co-management effort with the well-being of the community.

Invest early in building brand identity associated with Protected Areas. The concept behind the Tripura Gift Collection was to brand and add value not only because of the beauty of the Tripura cloth, but also because the Tripura people earn their livelihood in and around the PAs. Nishorgo's test was to use this branding to make Tripura cloth more valuable than similar cloth produced with no association to forests or protected areas. Similar efforts were pursued in branding and attempting to add value to the "Nishorgo Eco-Cottage Network" and to products sold at PA kiosques.

Direct the more expensive interventions towards those households or individuals that are to be directly involved in protection or conservation efforts. Initially, beneficiaries were identified using standard group formation criteria used by partner NGO, irrespective of whether the group members were directly engaged in PA conservation activities. There existed a reticence within the implementing team to depart from what are standard NGO beneficiary identification procedures. It became increasingly important to ensure that beneficiaries were selected first and foremost from those involved in patrolling or protection or from those that lived within or immediately adjacent to the PA, and would thus be most affected by a reduction in access to the woody biomass inside the PA.

Maintain a high degree of emphasis on participatory plantations and habitat restoration activities, as they offer the greatest single means of combining livelihood and conservation objectives. These were made a high priority because of the potential suite of positive associated benefits. Initially, those receiving access to plantation or habitat restoration opportunities were not asked or required to take part in PA management or conservation work. Learning from this gap, the project placed an increasing focus on ensuring that all those gaining access to such opportunities would have their benefits made contingent upon conservation and protection activities.

Develop some interventions that will benefit a large proportion of the population, even if the per person benefits from those interventions may be small. As the introduction of alternative livelihood opportunities progressed, it became increasingly clear that the high cost of introducing such opportunities would make it difficult for the project to reach even a majority of those immediate residents in and around the PA. Accordingly, the team recognized and prioritized a number of interventions which would generate a small economic benefit but be widely available. Although the household benefits from improved stoves and low-cost sapling sales, for example, were small, both of these activities were actively supported by the project and welcomed by the communities because they offered some tangible benefit and at the same time raised awareness of the CMO's efforts to support the broader community. The same was true of a number of the low-cost Landscape Development Fund (LDF) grant projects led by the CMO.

Conclusion

This chapter has described the overall approach for Nishorgo's alternative economic incentives activities, and identified a number of lessons learned from that process. In subsequent chapters, lessons are drawn from the specific strategies for implementing elements of this alternative incentive strategy program, covering incentives for community patrolling, nature tourism, labeling and value chains, carbon sequestration, capital access and energy use.

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13
Incentives for Community Patrolling and Protection

Ram S. Sharma and Philip J. DeCosse

The Nishorgo effort began with an assumption of a "win-win" solution that would meet the needs of those people who had been extracting from the Protected Areas (PAs) and also ensure core zone conservation. By 2005, it had become clear that this approach was no longer a viable option, due to the nature and scale of forest produce extraction and the exclusion of those involved with that extraction from the co-management framework. The demand for timber – particularly Teak – from pilot PAs with significant standing forests (principally Lawachara National Park and Rema-Kalenga Wildlife Sanctuary) became very high by 2005. Extraction rates, due to well-armed and backed felling operations, scaled to heights not before seen in these areas. There was little that even the most scrupulous Forest Guards or well-organized Co-Management Committees (CMCs) could do against such operations.

At any of the five pilot PAs, one could find streams of people carrying loads of fuel wood to truck loading sites at the edges of the PAs. A field study from 2005 (R. Sultana, 2007) on the 243 ha Satchari National Park estimated a daily extraction rate of fuel wood of 2 tons, with most of this being loaded on trucks bound for Comilla and Dhaka. This illegal activity was coordinated by well-organized commercial operations, typically hiring local day labor from nearby tea estates.

It had become clear that extraction of forest resources from PAs was happening so fast with such diverse and non-local beneficiaries, that a negotiated benefits-sharing agreement with all involved extractors was not an option any more. The Forest Department (FD) realized that it had to patrol and protect jointly with the new CMCs for effective protection. Not only was the small staff of Forest Guards insufficient against organized commercial extraction, but the rapid loss to the pilot PAs posed a serious credibility problem to the entire co-management effort. The Project risked spending its time working out a shared governance agreement of co-management while the forest disappeared.

Accordingly, Forest User Group (FUG) formation was modified. Initially it was assumed that Alternative Income Generation (AIG) through skill development training for groups of poor women would create a social force in favor of conservation while reducing the actual extraction from the forest. The focus was changed to "Community Patrol Groups" (CPG) that would receive livelihood benefits in return for taking a direct role in forest protection.

This chapter begins with a summary of the approaches and issues at each site. It then proceeds to a number of lessons learned and conclusions that emerged from the process.

Starting Assumptions and Subsequent Adaptation

The pressure and leadership for creating these Community Patrols came from senior staff of the FD. They recognized that bad news of rapid forest loss in the PAs would be directed to them as the statutory authority, and that it would support those interests opposed to participatory

PA management from the beginning. Internal orders were thus issued to Divisional Forest Officers to begin immediately to support formation of these patrols, beginning with Lawachara National Park.

Initial attempts to form Community Patrols met with resistance from the FD field staff, but with support from senior FD staff, the patrolling moved forward. The Divisional Forest Officer (DFO) of Sylhet Forest Division, under whose jurisdiction three of the five pilot PAs are located, was initially reluctant to accept the concept of community protection, arguing that sufficient legal provisions were not available to allow non-Forest Department staff to patrol public forest lands. He argued that responsibility and liability in the case of a casualty of a community patroller was not clear. Would he as DFO be responsible if someone were to be hurt?

The differing forest landscape of southern and northern PAs meant that community patrolling approaches would also differ. Northern pilot PAs, though small in area, have higher tree density and so are subject to high incidences of illicit felling for timber and fuel wood. On the contrary, the two southern pilot PAs are large and more degraded forests where mounting intensive community patrolling would have been difficult. General elements of the approach include providing patrolling equipment including torch, whistle, battery, uniforms, and boots to the CPG members; and Nishorgo Support Project (NSP) motivation and public awareness activities. A review of the approaches taken at each site explains the diversity of approaches required.

Site Approach: Lawachara National Park

The Park is surrounded by 22 villages that put enormous biotic pressure on its forests. Local people are involved in unauthorized exploitation of timber and fuel wood for cash sale in nearby towns such as Srimongal and Kamolganj. Stakeholders' consultations revealed that it would not be possible to extend effective forest protection without involving local people from these 22 villages.
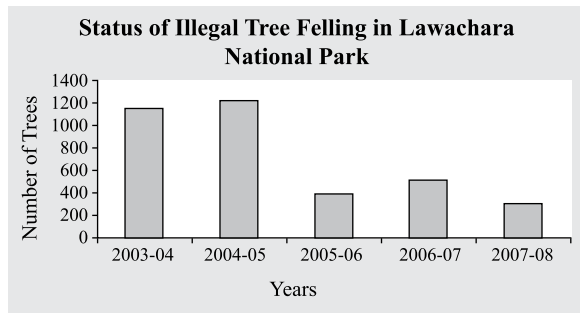
Based on consultations, the Park was divided into four patrolling sectors. Consultations were held with the members of existing FUGs (40 groups with a membership of 536 households) to identify who could take up responsibility for protecting each of the four identified sectors. An eight-member CPG from Lawachara Forest Village assigned by the *Mantri* (village chief), and a 10-member CPG in Magurchara Sector were designated for forest protection since they were already helping FD in their patrolling efforts. They were responsible for protecting Lawachara and Magurchara forest sectors respectively. These two groups have since been providing effective protection to the assigned areas.

Dolubari village, located on the southern periphery of the Park, was identified as having an important stake in the Park's forests because of the villagers' substantial dependency on the neighboring forests. Two FUGs, one each for Muslim *para* (a settlement or neighborhood within a wider village) and Tipra *para*, were formed under NSP for implementing AIG activities. The members of Muslim para FUG, some of whom were earlier involved in illicit felling activities, were successfully convinced to take up joint community patrolling in the southern sector. Unlike Lawachara and Magurchara Forest Villages (who have traditional authority

to extract some benefits from the Park), no formal benefits accrued to the members of Dolubari FUG and so they demanded wage payments for their forest protection efforts. Full wage payments for community patrols were not, however, favored, as they would result in unsustainable dependency. Later, it was agreed that the community forest protection efforts would be linked with socio-economic development through AIG activities. Each month Tk. 45,000 (about US$ 660) was deposited in the FUG bank account to be used for community development activities. Accordingly the FUG members received skill development training and demonstration grants for identified AIG activities.

Status of Illegal Tree Felling in Lawachara National Park

The organization of community patrolling proved time consuming in the Park's northern sector where there is intense pressure on the residual

Community Patrol Group members have successfully managed to reduce the rate of illicit tree felling in the Lawachara National Park since their formation.[Nishorgo Support Project]

patches of Teak from two neighboring villages – Baghmara and Baligaon. The inhabitants of these two villages were divided along political party lines, and some of the villagers were themselves actively involved in illicit felling of valuable Teak trees. Achieving an early consensus on community patrolling did not prove easy, as expected. Field visits revealed that several local elites wield influence over these villages and so they were contacted personally. In view of the strong influence of the current Chairman and ex-Chairman of Kamolgonj Union Parishad, it was decided to request them to nominate 10 young people from each of the two villages for community patrolling. Accordingly, a two-member CPG, with equal numbers of members from each of the two villages, was formed by following the same payment mechanism as the Dolubari sector. The CPG was subsequently also constituted as a FUG in order to extend AIG assistance to its members.

After forming the four CPGs, illicit felling reduced considerably in Lawachara (see the graph below based on FD records; although the total numbers of trees lost may be underestimated the method was consistent so the trend is considered reliable). The four CPGs are now being supervised by the Co-Management Committee. Leaders of all the four groups meet every month to coordinate patrolling activities. A female Patrol Group, formed in 2007 by mobilizing 20 willing women from Baghmara and Baligonj villages, patrols nearby forests during the day time. More importantly, the patrol members are involved in persuading fellow villagers not to engage in illicit tree felling.

Site Approach: Rema-Kalenga Wildlife Sanctuary

The forests in Rema-Kalenga Wildlife Sanctuary have suffered from smaller numbers of illegally felled trees per hectare in the past four years than Lawachara National Park, principally due to its remote location and poor road linkages, although numbers of trees lost fluctuate between years. The project identified 23 villages with stakes in the Sanctuary. Because the Sanctuary is a strip of forest along the border with India, Bangladeshi smugglers bring their produce out through roads that can be monitored easily by the Forest Department. This means that instead of round-the-clock patrolling inside the forests, smuggling of timber can be checked by closing main entry and exit routes. In light of this, CPGs were formed around the identified exit and entry routes. They were subsequently organized as FUGs in order to cover them under AIG activities. In other areas, FUGs, formed by involving local poor dependent on nearby forests, have been helping FD field staff, particularly in providing intelligence.

Site Approach: Satchari National Park

The Park's forests, though rich in biodiversity, are less prone to illicit felling, mainly due to lack of valuable timber trees such as Teak. Forest protection efforts are required mainly to check unauthorized removal of fuel wood by commercial interests and forest dependent local people.

The Tripura Forest Village, having 24 households and located within the Park, was identified to form a Patrol Group that would patrol jointly with the FD field staff. The women of the village are involved in AIG activities *in lieu* of their help in stopping illicit removal of fuel wood from the Park's forests. In addition, a total of 41 FUGs have been mobilized by including 560 households from 28 neighboring villages. Incidences of illicit felling have decreased substantially as evident from the Offence Registers maintained by FD (cross-checking indicates that these give reliable estimates of trends).

Site Approach: Teknaf Wildlife Sanctuary

Forest degradation has occurred in the Teknaf Wildlife Sanctuary mainly due to heavy biotic pressure from the huge population of the many villages/*para*s located in and around the forest, including Rohinga refugees from Myanmar. A large number of trees – mainly Garjan, Teak, and Telchur – were uprooted during the cyclones of 1991 and 1994. Authorized clearing of this deadwood became an entry point for large-scale additional felling.

Today, the dispersed patches of residual forest need protection against illicit removal of valuable trees such as Garjan. A Garjan forest patch in Silkhali sample plot has been jointly protected by a 13-member Forest Protection Committee of local people and FD field staff since August 2002 (that is, prior to the Co-Management Committee formation).

Nishorgo staff held consultations with this Baharchara Committee. It was decided to form three CPGs, each comprising 49 persons from amongst local people, FD field staff, and committee members. Members of the CPGs rotated night protection duties among seven member teams so that each member worked one night per week. All the three groups – excluding FD staff – were formalized as FUGs to gradually associate them with AIG activities.

Large CPGs, mainly those with 49 members, were similarly formed and mobilized to protect residual forest patches in Whykeong and Teknaf Ranges. A female CPG, formed from Karongtoli Forest Village, is protecting nearby forests by refraining from collecting fuel wood and timber, and motivating/obstructing others from illicit removal of forest produce. After imparting skill development training, the women members were provided with demonstration grants for starting AIG activities (fish culture, nursery development, poultry rearing, vegetable gardening, etc.).

Site Approach: Chunati Wildlife Sanctuary

Chunati Wildlife Sanctuary originally supported mixed evergreen and semi-evergreen forests that have over many years become substantially degraded; only a few scattered patches of Garjan trees remain. There are 70 *paras* in 15 villages in and around the Sanctuary. The FUGs, formed around the residual forest patches were expected initially to help FD field staff in forest protection. For example, the Bonpukur Garjan forest patch was rapidly degrading due to illicit felling by the inhabitants of neighboring paras. FUGs were subsequently formed, and were helped through AIG activities for which monetary and technical assistance was provided under NSP.

Though formed in the areas where illegal felling had been occurring, these FUGs were unable to prevent outsiders, particularly organized smugglers, from illicit felling. Accordingly, a CPG comprising 20 male members from the local paras (located around the Garjan patch) was formed and made responsible for community patrolling under the supervision of two Forest Guards. The strength of this CPG was increased to 35 members so that one team of five persons could patrol each day by rotation. These members were also involved in AIG activities. Another CPG was formed to protect nearly 200 ha of forest area with existing Garjan, Akashmoni, and Eucalyptus in the Chambal Beat of Jaldi Range. Similar CPGs have since been formed in Chunati and Jaldi Ranges. Local people, who cut the sapling mainly for firewood, were motivated to allow the saplings to grow. NSP provided them with skill development training and demonstration grants. Elephant habitat fragmentation, due to encroachment of forest land, was checked by making local people aware about the future potential of the Sanctuary – particularly for eco-tourism, due to its strategic location (halfway between Chittagong and Cox's Bazar – two important tourist cities).

Benefits to Patrollers

The Project team started with a three-part deal that could be worked out with identified local patrol group members under which: (a) they would provide their labor to protect the core zones; (b) they would be remunerated with access to nearby buffer area plantations; (c) their receipt of benefits from buffer plantations would be based on being active and upstanding members of patrol groups. To formalize this arrangement, the Project developed a format for "Participatory Conservation and Benefits Sharing Agreements" (PCBSA), an adaptation of the well-accepted and formalized Participatory Benefits Sharing Agreements used for simple social forestry operations.

As it evolved, four critical obstacles slowed the use of the PCBSA covering buffer plantation participation as an incentive for the patrollers:

- Neither CMC members nor Forest Department staff systematically allocated existing social forestry plantation resources to those patrolling; rather, they prioritized the allocation of those resources to their preferred beneficiaries (friends or contacts).

- On most of the periphery of Nishorgo's pilot PAs, there is no adjacent Reserve Forest land that might be used for buffer zone plantations. Where PAs have suitable peripheral forest, it is often under the management of a different division of the FD, and thus unavailable for a role in PA protection through benefits-sharing.

- Although the language of approved management plans allowed for some benefit-sharing to participating community members within the PAs themselves (through silvicultural activities such as thinning operations), FD field staff systematically refused to allow any formalization of such benefits within the PAs, arguing that the Wildlife Act prohibited any extraction from core zones.

- The FD staff generally argued that any modification of the established Participatory Benefits-Sharing Agreements structure would require approval of new Social Forestry Rules.

Thus, the planned approach to benefit sharing did not play as important a role as intended. So what were the perceived and real benefits that contributed to the involvement of 1,200 patrollers across the Nishorgo sites and that stimulated a rapid rebound of biodiversity within monitored forest areas?

Of the full number of patrollers, only 30 (less than 1%) received direct financial payments for their work (at Lawachara's highest pressure areas, where armed felling operations required significant benefits to patrollers). The remaining 99% of patrollers received access to a benefit package supporting alternative incomes. These varied from participation in social forestry agreements in buffer areas to more common household-based livelihood activities (e.g., technical and financial support for vegetable gardening, poultry production, etc.). These benefits appear to be the primary driving force for involvement of community patrollers, but a number of other perceived benefits have been noted, including the following:

- Perception that future benefits would be forthcoming from a direct role in protection of the PA, principally from the right to extract biomass from thinning operations

- Enhanced status within the community as uniformed patroller

- Participation in social organization (patrol groups) and activities

- Receipt of clothes, torch lights, boots, and working equipment

It is at present too early to assess definitively whether the benefits to patrollers will remain sufficient in the coming post-project years to ensure active involvement. It is clear that overcoming the obstacles to formal involvement of community patrols in the PCBSA

framework should remain a highest priority without which it is hard to conceive a sustained patrolling effort. The only real and sustainable resource that the FD and CMC can conceivably allocate to support patrolling is access to productive forest land next to PAs in return for patrolling.

Guidelines and Processes for Patrolling

As the Project progressed, it has become increasingly important to formalize the guidelines and processes for patrol teams. Issues that have stimulated this urgency include the need for processes to follow when apprehending illegal fellers or extractors, processes for reporting to CMC and FD field staff, and the nature of penalties if patrollers become involved themselves with illegal extraction from the PAs.

In light of this need, the Project developed a number of systematic approaches, including a pocket guide for patrollers issued by the FD (Bangladesh Forest Department 2006).

Involvement of Foresters and Guards in Joint Patrols

As originally conceived, community patrols would move through the forest areas and then report back to the CMC and FD field staff on progress and findings. Initially, most patrols moved without participation of any FD staff which gave rise to a number of problems. Both FD staff and local interests (perhaps logging interests) began to accuse the community patrols themselves of taking a cut on illegal felling operations. On occasions when the patrols identified illegal fellers by name and location, the FD would learn about it after it had become difficult to track down the patrollers and/or apprehend them. As a consequence, the CPGs began to accuse the FD of laxity.

It thus became clear that the patrols would need to be in closer contact with the FD field staff, either through direct inclusion of FD Foresters and Guards during field operations or through a regular system of reporting by patrols to the FD staff (and CMCs). Though this collaboration of FD field staff and CPGs is still far from perfect, it has improved greatly and there has been some formalization of interactions and communication.

Full Time versus Part Time Patrolling

The northern site patrol teams operated as full-time workers for six days per week and 12-hours per day shifts, while southern teams operated only one day per week on a rotational basis. Of the six patrolling groups at northern sites, two received cash remuneration while the others received opportunities for AIG activities. At the southern sites, patrollers received alternative income opportunities.

It is not year clear which of the two approaches – full-time or part-time – has been more effective at forest protection. This, too, would be difficult to measure, not least because the denser forests in the north are under a different, and more intense, pressure for felling and extraction than those thinner forests in the south.

When community patrolling started under Nishorgo, it was assumed – for the northern forests at least – that each patroller would receive a clearly defined agreement under which she or he would receive benefits in the immediate vicinity of the PA. Without a participatory benefits-sharing agreement being forthcoming for all patrollers, some other form of incentive is required. Even if participatory benefits are systematically allocated to each and every patroller, it may still not be sufficient to adequately remunerate the patrollers for their full time efforts.

Several observers have argued that regular payments of cash to two of the patrol groups in the north is fundamentally unsustainable when set against approaches with a greater degree of voluntary participation, or at least participation based on access to biomass rather than cash payouts.

However, experience indicates that the denser and more threatened forests such as those at Lawachara (where the two teams were paid in cash) require a greater degree of professional competence, regularity, and continuity from patrol teams. In dealing with armed and well-organized loggers, it is probably not appropriate to expect part-time community members to be equipped to handle complex issues such as systems for capture, apprehension, and evidence-gathering. If the patrollers are to work on a full-time basis, then their compensation for that work should be in keeping with the time and energy they have put in.

Where the economic value of the forest is high, as evidenced, for example, by attracting thousands of paying visitors, then it would seem logical to remunerate the patrollers in cash for their work, with funds derived from the payments made by these visitors who want to see an intact forest. Without a functioning entry fee collection and benefits-sharing system, however, it is not yet appropriate to extend this cash remuneration to full-time patrollers.

Women's Patrol Groups: A Distinct Approach

After a visit by CMC members to communities involved in PA participatory management in West Bengal, a number of female participants proposed to organize a similar effort in Bangladesh. This was initiated with the women of Mochoni near Teknaf and Baligaon village to the east of Lawachara. In these two places, the approach of the women has been different in a number of respects from the male patrol groups. The women, for example, spend relatively less time walking through the forest and more time going house-to-house in the periphery, at times trying to educate residents about the forest and at others, searching for people who have stolen logs or fuel wood from the PA. In both sites they have been far more social and interactive in their approach to supporting conservation through patrolling.

A cross-visit to West Bengal to observe communities involved in PA participatory management encouraged Bangladeshi women to get involved in patrolling. [Nishorgo Support Project]

Another important difference with the women patrollers appears to be their motivation for taking part. It appears that the women place a high value on the opportunity to associate with other women outside their homes in a socially acceptable activity. In villages where large women's gatherings are usually restricted to family events, this opportunity to meet and move through the forest in groups of 15-20 appears to be very attractive – more so than for the men.

Further research into the differences between men's and women's views of patrolling would be useful.

Lessons Learned

The following lessons have emerged from Nishorgo's efforts to engage community members through the CMCs for the purposes of patrolling Protected Areas:

Community patrols represent a viable means for slowing the pace of forest produce over-extraction from Protected Areas. Monitoring by the project and by the patrol members themselves indicates that tree felling and the rate of forest loss have been reduced.

Long-term incentives (benefits) for local poor people involved in patrolling are not well defined. Access to alternative livelihood support has been the main incentive, but is not linked with performance. FD and CMCs have been reluctant to designate rights to forest land-related benefits (such as use of buffer plantations or non-timber forest products) to patrol group members. A great challenge for the FD is to establish a positive linkage by coupling biodiversity conservation with land-based livelihood opportunities for local people. To date, neither CMCs nor the FD have taken a pro-poor stance.

The official sanctioning of joint community and FD patrolling sends an important message to surrounding areas that the local community – and not the FD alone -- has a central role to play in PA management. The presence of uniformed and sanctioned patrol groups throughout the forest sends a clear message that the FD is no longer the only official actor involved in PA conservation. In this sense, the presence of uniformed community patrols from surrounding areas may be as important for this communication purpose as it is for the reduction of illegal felling and extraction. Those fellers who tried to operate in the past through individuals from the FD or Ministry of Environment and Forests must now reckon with a larger and more diverse assortment of community representatives, rendering forest decisions more transparent than previously.

Official sanctions of community patrols by FD and CMC, and close cooperation or joint patrolling between community patrols and FD staff are necessary. This legitimizes community patrols, sends a message to the wider community that the community has been empowered, and makes use of the FD powers to apprehend potentially dangerous illegal loggers.

A future approach to participatory forest protection. Building on the community patrol lessons to date, a flexible approach to designing locally appropriate participation and patrol schedules for PAs that adheres to the following principles is needed:

1. Community patrol members come from the poor of villages adjacent to PAs.
2. Community patrols are authorized by and report to the CMC and its constituent FD representatives/ members.
3. CMC and FD liaise closely on patrols or operate joint patrols depending on the nature of forest PA exploitation.
4. Monitoring of habitat status is undertaken by community patrols, FD and other CMC members.
5. FD allocate rights to forest or other public land based benefits in adjacent "buffer" areas to community patrol groups in return for achieving standards of service agreed in the CMC.
6. Community patrol group leaders become members of the concerned CMC and any complaints or conflicts over patrols are handled in the CMC.

Conclusion

The Nishorgo team recognized early on that the diversity and rate of forest extraction precluded a "win-win" approach under which a wide range of community members would benefit as the forest became better conserved. CMCs, together with the FD, would have to take more dramatic steps to exclude some timber and commercial fuel wood extractors from the PAs without which the pilot PAs would be rapidly degraded and the credibility of participatory PA management would be called into question. Accordingly, community patrols were organized under the aegis of the CMCs and allocated access to benefits in return for their patrol work. There is little doubt that these patrol groups have been central to a turnaround in the health of the Nishorgo forest habitats. What is less clear, however, is the sustainability of the incentives for their involvement. A number of critical policy obstacles remain before such patrols can be associated through clear benefits sharing agreements giving access to buffer zone forest produce.

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14
Nature Tourism Enterprises

Md. Tarek Murshed and Philip J. DeCosse

Internal tourism growth within Bangladesh is limited almost exclusively to Bangladeshi nationals. The strength of this growth is nowhere more evident than in the seaside resort town of Cox's Bazar which even in 2003 was virtually empty from March through October and has now become a year-round resort town, complete with ten new six story hotels added in the past five years. Nature tourism has grown rapidly with the overall tourism sector, as evidenced not least in the doubling of paying visitors to the Sundarbans between 2003 and 2005, and the increased number of visitors to the new recreational "Eco-Parks" and "Safari Parks" established by the Forest Department. The Dulahazara Safari Park and Banshkhali Eco-Park – both small sites with under 100 hectares accessible to visitors – regularly now receive over 20,000 paying visitors in a single weekend. In Lawachara National Park the number of visitors has more than tripled each year since 2004, despite only basic visitor infrastructure.

From the beginning of the experiment, Nishorgo recognized that the potential of the internal nature tourism sector was significant for generating benefits to neighboring communities. It was also realized that this same sector could grow so rapidly at Protected Areas (PAs) as to create – if not managed properly – constraints to conservation. The challenge was to capture benefits for local communities from nature tourism enterprises, while minimizing adverse natural and social impacts of such nature tourism.[1] With these challenges in mind, Nishorgo advanced and tested a number of community-based nature tourism opportunities (JOBS 2004).

Starting Assumptions and Subsequent Adaptation

Locally-Owned "Nishorgo Eco-Cottage Network"

At the time of Nishorgo's launch, the lack of clean and secure accommodation in the vicinity of pilot PAs was a recognized deterrent to attracting small group visits to the PAs. Nishorgo aimed to stimulate growth of locally owned accommodation facilities ("eco-cottages") that would attract middle- and upper-income tourists. In order to demonstrate the viability of this approach, the Project developed a "Demonstration Package" for each cottage, including those items that unfamiliar local entrepreneurs might not otherwise purchase (e.g., uninterrupted power supply, imported toilets, sinks and fixtures, cotton sheets and pillows, and a standard complement of quality bamboo or wood furniture). Nishorgo also worked with a local architectural firm (Module Architects) to design a low-cost and tourist friendly two bedroom cottage design with an estimated total construction cost of $5,500 (Shams 2006a) (see the following photographs). A Detailed Bill of Materials accompanied these designs, and the Project team worked with interested entrepreneurs to package their projects for review and benefit-cost analysis where loans were being considered from local financial institutions. Release of the Demonstration Package to the entrepreneur was contingent upon his or her completion of structural construction of the Eco-Cottage.

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[1]   We follow the International Eco-tourism Society definition of nature tourism as "Responsible travel to natural areas that conserves the environment and improves the well-being of local people".

Computer Generated Image of Eco-cottage designed by Module Architects.

"Nishorgo Nirob Eco-cottage" at Srimongol modified from the computer generated image and constructed by local community member, Shamsul Alam. Already it has helped him to earn money.
[Md. Tarek Murshed]

Nishorgo's complementary long-term objective was to stimulate growth in a recognizable locally-owned "Nishorgo Eco-Cottage Network" that would assist in capturing added economic value in the communities around pilot Protected Areas and could be replicated at other Protected Areas. Each of the Eco-Cottages in the Network would:

▪ Meet common performance standards for cleanliness and food service;
▪ Be owned and operated by individuals living in the immediate landscape of a Protected Area;
▪ Undergo periodic re-certification of the "Nishorgo" label by a Panel to include tour operators, the Co-Management Organization (CMO) and the Forest Department;
▪ Contribute a fixed percentage of earnings to the CMO of the local PA;
▪ Take part in common marketing of the Network.

Work began in earnest on eco-cottage development in 2005, but progressed slowly at first for two major reasons. First, at the PA level, few believed that their investment in such cottages would ever be profitable. They found it hard to imagine that visitors would pay 650 Taka per night (at that time equivalent to USD 10) to live in a nature-friendly building and setting instead of going to Government guest houses or local hotels in nearby towns. Second, while some had relatives from whom they could obtain remittances for financing, those who did not found it difficult to get capital from local financial organizations. The well-known large NGOs had little familiarity and no business plans at District level to assist them in servicing this unusual financing request. Commercial banks – when consulted – wanted airtight collateral in land rights that would scare off individuals not accustomed to such legal requirements.

Once entrepreneurs began to commit to the cottage projects and line up financing, it became clear that they had little familiarity with tourist service provision. At about this time in 2006, both the Radisson Water Garden Hotel and Guide Tours (the leading responsible nature tourism company in Bangladesh) showed interest in training and otherwise raising the capacity of the Cottage Network.

In October of 2007, Nishorgo brought six Eco-Cottage entrepreneurs to a six-day intensive training course at the Guide Tours' Bandarban eco-tourist facility. During the week, the Cottage owners and their managers learned practical lessons from Radisson's chefs, housekeeping staff and others about quality hotel management. All the owners today recognize that this intensive training was essential to their success.

Initially, our objective was to see at least one Eco-Cottage operating per Co-Management Organization area, making a total of eight functioning cottages. By project end, only five cottages were in operation. One site (Whykeong), it was recognized, was not sufficiently attractive for tourists, as it had no other destination attractions in the vicinity. At another site (Satchuri), it turned out that the entrepreneur was in fact expecting a donation from the Project that exceeded the stated support that all Eco-Cottage owners received under their Memoranda of Understanding with the Project. His

A six day intensive Training Course at the Guide Tours' Bandarban eco-tourist facility where the Radisson Housing Staff trained the Eco-Cottage entrepreneurs on hotel management starting from making the bed to cooking.
[Md. Tarek Murshed]

cottage has still not been completed. At a third site (Shilkhali), the cottage is nearly complete, but the location, it is now clear, is not at present attractive for tourism, not only because of its more remote location but also because it was located near a bustling and loud market. However, today, five of the cottages are fully operational and receiving tourists. The most financially successful Eco-Cottages are at Lawachara National Park, one of which is meeting 90 percent occupancy rates even in the low season.

Youth Eco-Guides

Recognizing that youth unemployment rates were high at all the PAs, and also that visitors would have little familiarity with the nature areas or wildlife, a program of youth "Eco-Guide" development was begun as an additional service enterprise in three PAs. Beginning with a first group of 50 young people, each took part in an intensive five day training course in 2006. A second batch of 24 Guides was added in 2007. In addition to generating revenue for local youth and assisting in nature interpretation for visitors, the Guides were also to provide a measure of visitor management and security.

In late 2007, all the active Eco-Guides were evaluated in formal oral and written tests conducted by a Panel including the Chief Executive Officer of Guide Tours, members of Co-Management Organizations and the Forest Department. Guides were ranked at three levels: pass with distinction (green), pass (blue) and fail. Of the 74 initially trained, the 40 remaining active in guiding work took the exam, with 31 achieving blue ranking and 9 achieving green.

The Eco-Guiding service enterprise has created a steady income for the best guides at Lawachara NP and Satchuri NP (visitor numbers to Teknaf GR remain low). The highest performing guides have been regularly hired for field research support and to support VIP delegations. At the more visited sites such as Lawachara, other young people from the area, including young women, are now presenting themselves requesting permission to be trained to work as Guides, one indication of the profitability of the enterprise at that site.
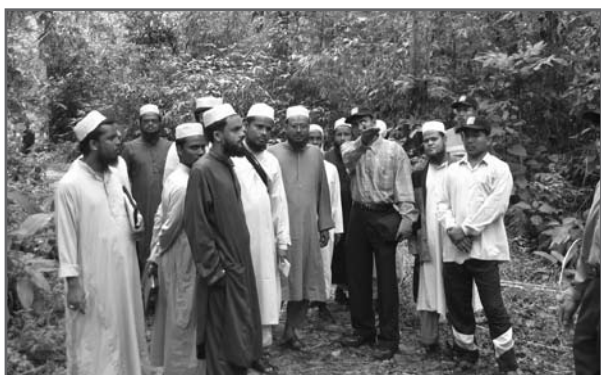
Eco-guide leading a group of Imams through a forest trail in Lawachara. [Nishorgo Support Project]

The processes for training and supply of Eco-Guides have been well developed, but sustained demand for their services requires also a measure of compulsion on groups visiting PAs requiring that when moving into the forest (other than short and localized trails) they hire a Guide. This is important on longer trails for safety and security (particularly in areas with wild elephants) and for environmental protection (through education of visitors about appropriate PA etiquette).

Elephant Rides

Nature tourists have demonstrated a high willingness to pay to avail elephant rides in nature areas, paying Tk 2,750 (US$ 40) per person for a 90 minute ride in Bali, Thailand and elsewhere. In Bangladesh, most domesticated elephants have been used either for hauling logs in timber operations or for circuses or other recreational uses. The steady decline in available timber in Bangladesh has created a situation where a large number of elephants are under-employed and their owners are seeking other productive uses for them. At the same time, the increase in visitation to Protected Areas suggested that – if properly managed – elephant rides might provide a service to visitors and sustainable revenue for local communities. In light of the low level of recognition of the Protected Areas as a unified system, it was also thought that elephant rides could raise awareness of the System.

Initial plans were to establish elephant ride operations at three PAs –Lawachara NP, Satchuri NP and Teknaf GR – all areas with high potential or actual tourist visitation. The specific objective was to provide opportunities for long (more than 1 hour) and more expensive rides within the PAs. So as to reduce impact in any one area, rides would be spread out along multiple trails covering half-hour, one hour and three hour circuits. One hour rides were to cost Tk 350 (US$ 5), a price considered by most involved to be extremely high and unlikely

to be paid by visitors. A fixed proportion of elephant income would be directed to the Co-Management Organizations for use in conservation.

The Nishorgo team worked through a number of challenges in developing the enterprise. Perhaps most importantly, virtually all key actors involved with this enterprise (CMOs, the Forest Department, tourists and even the elephant "mahout" operators) were only familiar with short recreational elephant rides. Accordingly, they expected that rides would be no more than five minutes and cost less than Tk 20 (US$ 0.25). The idea of elephant trekking was unfamiliar to all involved except those that had traveled to observe it in India or elsewhere. In the first year of this operation at Lawachara, the undesirable situation occurred in which too many tourists entered the center of the Park, elephants overate nearby vegetation and the CMO for all this earned virtually no revenue (Shams 2006b). The operation, in short, had failed to achieve its objectives. What is more, the "howdah" consisted essentially of a blanket thrown over the elephants' backs, making a ride of more than 5 minutes extremely uncomfortable in any case.

Adaptations were subsequently made to the approach. CMOs agreed to move elephant rides outside core areas. Longer rides have been required rather than the short rides. CMOs sell tickets themselves, to ensure that a fixed proportion of income comes to them from the elephant owner's earnings. At Teknaf Wildlife Sanctuary wild elephants are present as both individuals and in herds. While some felt that the wild elephants would keep their distance from the tame elephants, sufficient expertise did not exist in-country to be absolutely sure of this, and so it was considered safer not to proceed without better information. Accordingly, elephant ride operations were stopped at that PA.

The greatest hurdles to continued expansion of sustainable elephant ride enterprise operations is the lack of firm control of the process by the CMO or the Forest Department, combined with tourists who expect to pay much less than the stated price for the longer rides. The CMOs have yet to realize that elephant enterprises can generate significant revenue for them. They have also failed to take seriously the damage that elephants can quickly cause to the vegetation where they operate.

The experiences gained in pricing, revenue collection processes, howdah development and business models have made it possible to expand the approach to other sites in the future. One remaining issue to be worked out is the supply of elephants. Today, they come from two sources: private elephant owners and the FD, which has maintained elephants for its logging operations for years. While privately owned elephants are easily available in the Sylhet area, the Chittagong area by contrast has few privately

The final Howdah design which made elephant riding convenient and safer on longer trails. [Md. Tarek Murshed]

owned elephants. Rather, most are owned by the FD for use in the Hill Tracts. Employing these Government-owned elephants in private enterprise operations requires overcoming some obvious bureaucratic obstacles.

Sale of Tourist Souvenirs and Refreshments within the Protected Areas

Recognizing that nature tourist visitor numbers would increase, it was evident that they would want to buy small food items (such as tea and biscuits) and some sort of souvenirs during their visits. Initially, the Project team focused on design and provision of a range of items assumed to be of interest to tourists as souvenirs, including t-shirts, polo shirts, hats and postcards, as well as a range of written information, including annotated hiking trail guides and a book on all the PAs of Bangladesh. These items would all be sold by "official" stores to be operated directly by the CMOs. As in official PA tourist shops in many parts of the world, products generally tended toward higher quality while also being of higher price than similar products in the local market. The assumption was that visitors would be willing (for clothing items and souvenirs at least) to pay a premium for buying the tourist items while within the PA itself.

While product development was considered attractive and modern (shorts, hats, etc.), sales of these clothing souvenirs was extremely low. The same was true for sales of English and Bangla hiking guides, PA visitor guides and similar written materials. It became apparent over the period that visitors perceived that they could get the "same stuff" in the local market (e.g., a hat) for much less than the Nishorgo hat being sold in the PA, and so were unwilling to pay extra for it. The same perspective applied to other products. Written products were also considered too expensive to be sold sustainably.

As the Nishorgo project was ending, work was under way to put in place an initial single concession to a private supply firm to sell tourist items directly to the CMOs, and to redesign Nishorgo-branded products to more market-friendly specifications. A similar process was under way to identify a private re-supplier of the written Nishorgo materials (trail guides, etc.). It remains to be seen if these concessions and tourist products will be financially viable.

The CMO shop at Teknaf GR guest house. [Quamrul Ahsan]

By 2006, the need for more common tourist items, especially simple refreshments (tea, chips, etc.) arose, especially at Satchuri NP and Lawachara NP. In the interests of ensuring benefits for those directly involved in protection (in this case the Community Patrol Group members), the right to establish such small tea shops in the core zones was unofficially allotted to the patrol groups themselves, or their immediate relatives. Community tourist tea shops have operated for two years now at Satchuri NP and Lawachara

NP, and are generating considerable benefits for ethnic minority community members, including patrollers. However, the terms of establishing these stores and their responsibilities to the PA itself, have not yet been sufficiently clarified. The store managers have generally not paid sufficient effort to litter collection, nor have they allocated a portion of profits to the CMO for conservation work.

In 2008, proposals were made by all eight of the CMO for using Nishorgo Landscape Development Fund grant resources to increase the number of such community-managed tourist tea shops. All these shops were blocked by the relevant DFOs on the grounds that there was no precedent for anyone from outside the Government putting in place community constructed and operated stores on Government land. This issue is still being addressed.

Picnic Sites

The pressure of picnic parties during the winter season has grown steadily in the past three years. In this period on any Saturday morning in the dry season, 6-8 buses arrive at the entrance to Lawachara National Park, each with 50-70 people going to a group picnic. The need for designated picnic sites outside the core zone of PAs has been evident for some time, but it has taken longer to implement this and to recognize the enterprise service opportunities associated with this tourist demand.

On a cross-visit to West Bengal State in India in 2006, several members of the CMOs observed community-operated picnic sites outside PAs (where communities kept the areas clean and provide cooking services). A number of these sites were managed by local women. This experience helped in stimulating greater interest in Bangladesh.

Accordingly, picnic sites have been identified, prepared and numbered around the fringe of Lawachara National Park while sites have been identified in nature tourism plans for other sites. Tickets have been allocated for the pre-designated picnic sites just outside the PA, allowing picnickers to come back inside the core zones in smaller groups.

In spite of these efforts, the management of picnic sites for community and visitor benefit has not developed quickly. Obstacles to the growth of this enterprise have been principally the combination of lack of interest by the CMOs and lack of support by the FD, again because of reticence to allow communities to benefit from activities within the boundaries of either Reserve Forest or Protected Areas. CMOs have been less interested in this particular activity, it appears, because the elite members of those Committees do not see any way they can benefit from them, as the service is to be provided by lower-income stakeholders. Additionally, strong enforcement structures required to direct picnic groups (often better educated young people from national universities) outside core zones to designated picnic sites are not yet in place.

Operation of Student Dormitories

The construction plans for Nishorgo called for five 10-14 bed Student Dormitories, one at each of the Nishorgo pilot sites. The objective was to provide an additional means of engaging both young students and researchers as partners to Nishorgo. As the Project progressed, it was recognized that such dormitories would be extremely difficult for the Forest Department

to maintain (because of the lack of a maintenance allocation in FD revenue budget and the difficulty for FD accepting fees for accommodation outside the official Government rules). Accordingly, it was proposed to have the dormitories operated by the CMOs themselves – or their delegates – so as to provide accommodation for youth groups in a way that would also generate income for the community.

The first CMO to take over a dormitory was the Teknaf CMO, which received authority to manage the Mochoni Student Dormitory in July 2008. Other dormitories were intended to be handed to CMOs when completed. It is too early to assess whether this enterprise will be viable, but could become an important example of the Government engaging community members in a public-private partnership aimed at generating benefits from the PAs at the same time as service provision is improved.

Community-based Nature Tourism Planning

Lesson have been progressively learned concerning the process of engaging communities in nature tourism planning. When Nishorgo began, it was envisioned that project staff would work with sections of the communities to facilitate joint community-based nature tourism planning.

It became apparent over time, however, that such community-based planning approaches were neither appropriate nor feasible for Nishorgo-associated communities. Most importantly, members of the CMOs in the pilot PAs had little idea of what nature tourism might mean, and how they might benefit from it. They did not see many visitors to the PAs, and thus had no idea what sorts of future interest might be expressed for service industries. They were so unfamiliar with the possibilities (not having seen it anywhere), that initial sessions conducted on such planning were not sufficiently grounded to provide a basis to get started. The second major obstacle to community-based tourism planning was the difficulty of screening and including those that were more likely to be actual entrepreneurs.

Two week long training program for Assistant Conservators of Forests (ACF) on "Development of Eco-tourism Micro Plans for Protected Forest Areas" held by Nishorgo Support Project. [Md. Tarek Murshed]

These two problems affected the initial startup of small nature tourism enterprises. Once those enterprises did start up (cottages, sale items, etc.), then a new and more complicated problem presented itself: setting the framework at a given PA for what enterprises within that PA would be allowed and encouraged. This second planning problem directly involved the government, since it would be government that would approve or reject proposals to undertake community enterprises in the PAs.

Recognizing this need, and the lack of planning interest and capacity on the part of the CMOs themselves, the Nishorgo Support Project organized a dedicated 10-day intensive "Nature Tourism Micro-Planning" Course in 2007. The course, designed for Assistant Conservators of Forests, allowed framework micro-plans to be developed for each of the pilot PAs. Such planning has helped to set the stage for communities themselves to more organically and fluidly engage in enterprise development around (and sometimes inside) the PAs. To date, by stimulating a number of specific nature tourism enterprises, the Project is putting in place the tangible awareness of potential that will help the communities to more clearly reflect on what they would, and would not, like to see from the area in the future.

Lessons Learned

A number of general lessons can be drawn from the process under Nishorgo of stimulating growth in nature tourism enterprises in ways consistent with conservation of the Nishorgo pilot PAs.

The special challenge at PA sites is to increase the community revenues from tourism without compromising the environment. Nishorgo's experience to date has shown that increasing the number of tourists is easy. Put up some trails and a nice visitor center and toilets, and publicize the site, and the people will come. But increasing visitation – as Satchuri NP and Lawachara NP have shown – does not directly lead to greater benefits for the local community nor to more effective conservation. In the future, planners need to reflect carefully on the type of tourist that is being attracted to the PAs. In order for this process to work, the PA-level framework for nature tourism needs to be clearer and more rigidly enforced.

Review and approval of enterprise opportunities within PAs – including the framework plans for nature tourism development – needs to be led by experienced central FD staff members, preferably in partnership with experts from the nature tourism industry. Neither the CMO nor local Forest Department staff at PA level have the necessary experience in tourism operations to identify, review and approve opportunities within the sensitive confines of the PA itself. The trial operation of elephant rides within the core zone made it apparent that while attractive to the CMOs as an enterprise, the elephants had a negative impact on the environment in the way they were being operated. For such enterprise opportunities, it is essential to undertake careful planning including private tour operators along with senior FD staff in order to develop appropriate protocols to meet both conservation and benefits sharing needs. The nature tourism enterprise plans for each PA need careful vetting and input from a similarly high level of expertise.

It would be of great assistance to conservation if complementary nature tourism development planning processes were led by private tour operators, perhaps with involvement of Government tourism support agencies. Although Nishorgo pilot sites are now recognized by the leading nature tourism operators, visits to only some Nishorgo sites are part of advertised tourism circuits for different parts of the country. The development of new visiting circuits requires a process led by the tour operators themselves, ideally with involvement of regional or national tourism agencies. While forays were made in engaging the Parjatan Corporation (Government tourism agency) under Nishorgo, it became clear that Parjatan is almost exclusively engaged

in visits by foreigners to Bangladesh rather than in internal tourism, which is the primary target group for growth under Nishorgo. Regional private tourism support organizations such as that of Sylhet Division may be a more productive partner. In any case, the Forest Department needs to recognize that it has neither the expertise nor the time to support this larger circuit planning and tourism planning process without leadership from private sector operators.

The need for leadership by tourism sector specialists is nowhere more evident than in the future growth of the Nishorgo Eco-Cottage network. One of the lessons emerging from the eco-cottage development process is the recognition that, when it comes to designing, building and operating such "bed and breakfast" type accommodation facilities, every person involved considers him- or herself an expert, including those NGO and FD staff that have been involved. Progress on the construction and finalization of the cottages proceeded most effectively once they had advice from individuals (e.g., ex-employees of Guide Tours and staff of the Radisson Hotel) with real practical experience in the tourism sector.

A more systematic effort is required to orient PA visitors to the necessity of supporting local enterprises. The vast majority of visitors to Nishorgo pilot sites understand that they are visiting a Government-owned facility. With this assumption, it is commonly believed that access to and use of the site should be either free or nearly free. Fees for services offered at the Nishorgo PAs have been a complaint of many tourists. While revealed willingness to pay for PA visitation is high (as revealed through actual travel costs), the stated willingness to pay for basic services is extremely low (Haque and Bakht 2008). The assumption of most visitors is that forests belong to the Government, and the Government should allow us to use them for free, or for only small payments. This attitude of entitlement undermines the community's efforts to charge fair prices for providing those services that can sustain the PAs. In the future, greater efforts can be made to state clearly to visitors that they are expected to pay fair rates for services, not only entry fees but other services as well (eco-guides, elephant rides, etc.).

CMOs need to shift focus from direct operation of tourism enterprises to concession management. During the Nishorgo pilot, the CMOs have shown much more interest in operating enterprises themselves rather than allowing other local stakeholders to operate. The focus of the CMOs needs to shift towards allocating clear concession agreements with local stakeholders to operate tourism enterprises, rather than trying to manage operations themselves. As part of these agreements, the CMOs need to negotiate fair and strong clauses for benefiting from a percentage of the enterprise revenues or profits. During Nishorgo, the CMOs did not pay much attention to negotiating agreements with elephant ride operators. CMOs generally showed little interest in those enterprises that they managed directly (e.g., sales of tourist items).

CMOs must perceive nature tourism enterprise opportunities as a central strategy for their own sustainable financing. Generally, the CMO members have not recognized that tourism enterprise growth in and around PAs can provide a significant boost to cover future CMO operational costs. The CMOs are providing a protected forest to entrepreneurs, and should be justly compensated for that service. In the pilot, this was done through agreements with entrepreneurs under which they were to provide a percentage of revenues to the CMOs. To date, the CMOs have been weak in enforcing these agreements.

Establish still more clearly within the FD that Co-Management Organizations – and associated stakeholders – have a basic right to benefit from forest conservation through nature tourism enterprises undertaken in core PA areas. Throughout the Forest Department, the perspective remains common that their role is to keep people out of the PAs. One corollary to this is an unwillingness to allow any economic activity within Government lands, including community-based nature tourism enterprises. This unwillingness was translated into cancellation or slowing of a number of community enterprise activities under Nishorgo. As a result, CMOs are now hesitant to even propose services that might be offered within the PAs. And yet, without a clear understanding that the community can benefit from conservation – including with managed enterprises in core zones – then conservation is not likely to succeed. Of course, the location, type and number of enterprises should be consistent with a conservation based PA management plan agreed by all members of the respective CMO, but the first and most urgent challenge is to make the local poorer CMO members understand categorically that they and the people they represent have a right to benefit from conservation enterprises and other prescribed activities, and for the CMO as a whole to see enterprises as a way of generating funds to protect and manage their PA.

Any enterprises affecting, or involving, ethnic minorities should be developed by those minority groups alone, without outside interference. We have noted under Nishorgo a readiness by those outside the ethnic community to propose new enterprises involving the minorities, even when those minorities do not support the idea. It was proposed that ethnic dance groups be formed at one site, although that community was not consulted. It was proposed that Eco-Cottages might be developed within another community, but that community later rejected the idea. For cultural reasons unique to these areas, it is particularly important to give primacy of voice to the ethnic minority groups themselves in developing any tourism enterprises.

Conclusions

Under Nishorgo, it has been demonstrated that nature tourism can create real and tangible opportunities for members of neighboring communities to benefit directly from their conservation efforts. While the concept of a number of new enterprises has been successfully demonstrated, much less progress has taken place in having the CMOs recognize the importance of these enterprises for their own future sustainability, and in putting in place a disciplined and clear framework under which such enterprises are conducted.

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Value Addition through Labeling in Hand-loomed Cloth Products

Mehrin A. Mahbub

As part of efforts to create new opportunities for income generation and livelihood improvements at the pilot PAs, a value chain study conducted in 2004 identified traditional loomed cloth as a particularly high potential business area. Evidence from the five Nishorgo site appraisals conducted in 2003 and early 2004 showed that the ethnic minority populations living inside and nearby the Satchari, Rema-Kalenga and Lawachara PAs each maintained active traditions of cloth weaving. At the Teknaf Wildlife Sanctuary's northern boundary, the appraisals also indicated that the Rakhain villagers had still maintained cultural traditions in weaving. Also throughout all of the Nishorgo sites, a range of other traditional handicraft activities remained in weaving baskets and other implements using bamboo and other natural products. The Nishorgo team over subsequent years worked to expand opportunities associated with handicrafts of different kinds. This chapter aims to tell the story of how that work proceeded, and what lessons were learned.

Starting Assumptions and Subsequent Adaptations

When work on handicraft value chains under Nishorgo began in 2004, the team had decided that particular attention would be paid to identifying market opportunities that capitalize upon the perceived value and uniqueness of traditional cloths, while working to avoid a value chain subsidized by the project or any participating NGOs. Bangladesh is home to one of the most successful handicraft social businesses in the world: that of Aarong Enterprises. In addition, among the Bangladeshi clothes and cloth designers that have received global recognition for fashion, some have taken fashion inspiration from the ethnic minority groups of the country. So the Nishorgo team believed that the opportunity existed for women engaged in this practice to maintain their culture and use their skills to improve their income-earning possibilities at the same time.

Handicraft and Cloth: Target Market

The JOBS assessment (2004) had recommended that handicraft markets focus on cloth development for the export market, with a particular attention to meeting international demand for the then-fast growing area of home decorative products (bed covers, curtains, pillow covers). This strategy posed the immediate problem, however, that the total potential number of women cloth producers throughout the entire Nishorgo PAs numbered only in the low hundreds, principally across the Tripura, Monipuri and Rakhain populations. So the potential participants in a cloth value chain would likely be too limited to meet orders of a large export market buyer. The Tripura ethnic communities became a particular focus of attention in 2005 and into 2006, as the project team searched in particular for income generating opportunities that would be of broad interest to the women of those ethnic minority communities. Throughout other areas of the northern Nishorgo sites, a range of poultry rearing, homestead gardening and other farming practices had been encouraged, but were of limited interest to the ethnic communities near those sites.

In the context of these constraints, and in light of the potential presented by the excellence and familiarity of the hand woven cloth produced by the women of the Satchari, Rema-Kalenga and Lawachara communities, the Nishorgo team had decided to target a market characterized by these traits:

- Interested generally in ethnic products from minority communities

- Interested in practical and yet stylish household products that would incorporate swatches of such ethnic cloth

- Willing to pay a higher price for such household products due in part to an association with the story of the women producers and their role in the forest Protected Areas, as well as their use of the hand-loom as opposed to the more common machine loomed products.

In light of the limited cloth production, the target market did not include exports, principally because the limited number of women living throughout the ethnic minority communities around Nishorgo sites would not provide the production potential to meet a steady supply for export.

Handicraft and Cloth: Conception, Product Design

With this target market in mind, the Nishorgo team sought to identify lead firms interested in expanding supply of high quality ethnic cloth to meet their market potential. Aarong was approached at that time, but it appeared that the prices Aarong would be willing to pay for the much more time consuming and expensive hand loomed Tripura cloth were too low to be of interest for the weavers. Two other lead buyers were approach and similarly only expressed interest in buying at prices below that considered reasonable for hand-loomed cloth.

While these retail outlets offered inexpensive and high quality products, none of them took advantage, or tried to take advantage of the unique sourcing story of the Nishorgo products. In light of the absence of such interest, the Nishorgo team decided to go further into an entrepreneurial area and create sample products that might demonstrate proof of concept about this value of labeling. An open tender was offered to firms and individuals to propose designs that might be used to meet our target consumer's needs. Review of competitive bids from Bangladeshi and foreign designers led to selection of a design contract to a Balinese designer and artist, who came up with a range of initial products incorporating high quality leather together with the Tripura ethnic cloth in a line that would be called the "Tripura Gift Collection". The design blended the unique Tripura hand-woven cloths into a range of household products (purses, coin boxes, pencil boxes, jewelry boxes, wallets) incorporating leather as well as the cloth. The items were designed for sale to wealthy Bangladeshi and foreigners.

Around this time, one particularly active export firm that had worked in both leather and cloth, expressed interest in expanding sales of this product line. The firm was already in the business of selling both leather products and ethnic cloth products within Dhaka and to Germany, and seemed to offer the best available opportunity to push ahead with expanded sales of the new line of products. Throughout 2007, this firm expanded its interaction with producers at the three PAs as it refined the products it designed for sale. A range of complementary materials were developed, including a brochure that explained the context of the Tripura community's

culture and work in conservation, and a stall layout. Terms and prices for buying contracts between the company and the women were worked out, much of this with the intermediation of the project team to ensure that all sides understood those terms. A particular emphasis was put on quality control and the use of quality yarn inputs to meet both color fast standards and standards for health and quality. (See color photo of the Collection in the color insert.)
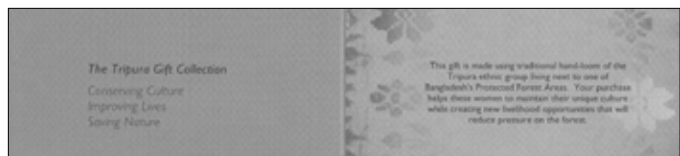
Tripura Cloth: Establishing the Value Chain

Sales of the new Tripura Gift Collection began in 2007 and continued through 2008, with sales by the NGO to select fairs and special events in well-to-do areas of Dhaka, as well as a stall inside the Radisson Water Garden Hotel. The stall placement in the Hotel was aided by the Radisson Water Garden's interest in and social commitment to Nishorgo as part of its Corporate Social Responsibility.

Radisson Water Garden Hotel gift shop selling Tripura Gift Collection items. [P K Pasha]

The Collection items sold steadily throughout the period and beyond the end of the project, and the women of the three sites continued to maintain increased production levels throughout this period. Sales of the Tripura Gift Collection continued into 2009, although in late 2009 the single firm that had handled the value chain shifted out of this product line. Its owner had assessed by then the cost of a booth at the Radisson and the difficulty of maintaining sales directed to the upscale market was too expensive when compared with the volume of sales. For a time after that, the Gift Collection line was made available within a number of shops in the upscale Gulshan area, but sales slowed in late 2009.

This label was attached to Tripura Gift Collection items to enhance product value.

The Gift Collection certainly demonstrated a willingness to buy from the target market group that was considerably higher than the cost of similar items that did not carry the "story" of conservation and of the women's ethnic background. But prices were necessarily high for hand-woven cloth produced using the traditional back-loom of the Tripura. Production cost for a piece of cloth of dimensions approximately 4.5 feet by 7 feet (approximately 1.5 x 2 m) was 5,000-7,000 taka, principally because it took a full month to make the piece. Consumers can purchase the same size cloth machine made in Bangladesh for 800-1000 taka, even one imprinted with indigenous patterns. So consumers would only pay the higher fee, both for the cloth itself and for the gift collection made from it, if the product was in some way associated with the feelings of protecting nature and conserving the Tripura culture.

Tripura Cloth: Dynamics within the Tripura Community of Producers

Tripura women soon realized the fact that quality control was instrumental for the successful marketing of their woven clothes. [Nishorgo Support Project staff]

Within the Tripura communities of Rema-Kalenga, Lawachara and Satchari, a number of issues emerged from the process. There certainly existed a sufficient awareness of the traditional weaving skill amongst young Tripura women so that learning about how to adjust to meet market needs was not difficult to execute. However, the readiness to respond to buyer demands differed greatly amongst the women at the three sites. Women from some villages (particularly Dolubari village near Lawachara) were more market aware and responsive than those in more remote villages. Most young Tripura women produce their own cloth, so the critical shift was whether they would produce for the market in addition to producing for their traditional needs. The Lawachara community, with more contact to outside visitors, was far more ready to make this shift than at other sites.

The process of producing traditional cloth from their own homes was particularly attractive to the women of the Tripura communities because it allowed them to avoid a level of harassment that they had perceived in leaving the village to work in urban areas.

The women, especially at Lawachara, became extremely sophisticated in their quality control and adaptation of new market products. Initial market designs were brought to the villages and explained in training courses, but within the course of the first year, the buyer needed only to fax his requested designs to the women, and they would produce the patterns without error, often suggesting improvements or adaptations.

Tripura women taking part in training on weaving at Lawachara. [P K Pasha]

There existed a gap in raw material (thread) quality between what the women in the villages had been using and what was required for the export market particularly in terms of color fast products and products that would be child-friendly, with no negative health effects. Within a short time, the lead firm supplied all the necessary raw input thread to the community to ensure that these conditions were met for final product.

The positive benefits of pride associated with this market line were certainly a non-market benefit of the process. As the women's cloth sales increased and awareness of the Tripura Gift Collection rose, the women received increased attention, both through the press and through visits by tourists and official delegations to their village. This process certainly increased the willingness and readiness of the women to speak out about their work, their culture and the National Park near them.

The role of the Nishorgo team – and particularly the NGO partner RDRS working in the northern Nishorgo sites–was central to growth of sales. RDRS served as an effective interlocutor between the Dhaka lead firm and the women of the community, helping to explain the demands of the market where necessary, and providing a platform for the women of the multiple and dispersed Tripura communities to come together to share lessons and techniques.

Efforts at Cloth Improvements with Other Communities

Attempts to apply the lessons learned from the Tripura community to other indigenous communities associated with the PAs required some new adjustments. The team had assumed that a process similar to that for the Tripura could be undertaken with the Rakhain community of forest villagers living on the north side of the Teknaf Wildlife Sanctuary. There, however, conditions were different in two important respects. First, the cultural knowledge of traditional weaving had largely disappeared amongst the Rakhain. In the villages of that area, there was only one women alive – and she was quite elderly – that even knew how to do traditional weaving. The young girls had no knowledge at all, so expanding production for the market would require an extensive initial investment in capacity development. This amount of time and resources was beyond the scope and resources of Nishorgo. Expansion of weaving by the Rakhain community was made more difficult by a second factor: the low prices of ethnic cloth being imported from Myanmar, and the adoption and use of that imported cloth by the young Rakhain women and girls themselves. Essentially, cheap market prices for ethnic cloth (all of it machine made) had created conditions in which locally made cloth was no longer part of the Rakhain culture.

The Monipuri throughout Bangladesh and India have also produced cloths and cloth products for sale. Indeed, at Lawachara, the Monipuri community on the east side of the Park already had well established cloth trading stores, with the produce coming in from India's Monipuri State to the east of Bangladesh. Within that small community, too, home weaving was no longer a part of the process of making clothing known to the young women. What is more, the women were not interested in weaving since they could get what they considered acceptable machine made cloth through their own community stores.

Lessons Learned

Consistent sales of labeled "Tripura Gift Collection" products over a three year period made it clear that target consumers were willing to pay higher than normal prices in return for the cultural and environmental associations of the Collection. In this, and in the readiness for a lead firm to join with the Tripura women producers to generate a high quality product line that met sustained sales, the core concept of the Nishorgo cloth market pilot was proven: if a product can

be closely associated with both the environment from which it comes and the people who have created it, then the willingness to pay of consumers can be increased.

However, the high cost in labor of hand loomed Tripura cloth and the small production potential (due to the small number of Tripura women at Nishorgo areas) made the Collection sales and profit margins more difficult to sustain. Without a larger production base, a more widely recognized label or brand, and better defined target markets (domestic or foreign), it would be difficult to maintain profit within the value chain.

Ethnic groups at all Nishorgo pilot sites saw rapid loss of cultural knowledge, including in the area of handicrafts, and that called for more judicious assessment of the potential for building livelihood improvements associated with culture. For the Rakhain, there remained little cultural base to build upon in this particular area of cloth development. Even for the Tripura, their culture was and is under threat. Young women have ceased to wear traditional necklaces, and rarely wear traditional cloths except for ceremonies or cultural events. Any interventions to create marketable opportunities must be aware of this rapid rate of cultural loss.

The pool of potential producers – the size of the production base – for a branded or labeled product was small when it only included the Nishorgo pilot sites. Success in such branding would require a linked or similar product from many more sites. Such a national effort may be considered across the full network of Protected Areas, where all products made by households working to conserve the PAs might receive the "Nishorgo brand". Although quality assurance was not an issue for the pilot Tripura Collection, this is more likely to be an issue for a wider range of products from dispersed and diverse communities around the entire PA network.

Conclusions

As co-management of PAs moves from pilots such as Nishorgo into a broader approach applied throughout the PAs of the country, opportunities exist in particular for taking this labeling concept for products or services from ethnic minority groups to a more viable market scale. The benefits from cloth sales to the Tripura women were evident not just in the revenue generated, but in the impact on cultural pride and strength. It would appear appropriate to explore options for such a mix of market expansion and cultural protection on a broader scale across the country's full PA network.

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Carbon Sink Projects as a Revenue Source

Ram A. Sharma, Ishtiaq U. Ahmad and Philip J. DeCosse and Salahdin Imam

In light of the rapid growth of carbon financing globally, combined with the high growth rates of forests in Bangladesh's climate, it appeared logical to the Project team to pursue pilots in carbon sink financing as an additional non-consumptive use of forests within the Protected Area system. Not only are Bangladesh forests fast-growing in general, but they also provide a variety of livelihood benefits to nearby poor populations. Pursuit of opportunities for carbon sink financing on one of the Nishorgo pilot Protected Areas thus offered an opportunity to generate financing from and for conservation, assist in poverty alleviation and assist in climate change mitigation and adaptation.

For the purposes of conducting such a pilot carbon sink project exercise, the Chunati Wildlife Sanctuary was selected. This 7,764 hectare Sanctuary was heavily deforested prior to 1990 in the wake of its being declared as a Sanctuary in 1986. In the intervening years, biomass extraction from the Sanctuary has continued leaving much of the Sanctuary as open grassland dominated by sun grass, with interspersed trees. Two Co-Management Committees assist in managing the Sanctuary, one on the western side of a central ridge and one on the east. In spite of habitat degradation, the Sanctuary remains home to an important migratory population of Asian Elephants. Evidence indicates that since adoption of the co-management approach, the health of the Sanctuary's ecosystem is returning.

Starting Assumptions and Subsequent Adaptation

Bangladesh experience on carbon projects is confined mainly to waste management industries, with no forest carbon projects prepared to date. In the absence of any previous experience on developing carbon projects in the natural resources sector of Bangladesh, it was initially contemplated to solicit technical help from an international organization interested in the packaging and sale of carbon credits. Many such organizations now list and advertise on the web. The costs to the Project of pursuing this approach, however, were generally extremely high, including relatively expensive foreign consultants and travel to and from Bangladesh.

Rather than pursuing this approach, the Project formed a team including staff members of the Forest Department (FD), staff of the Bangladesh Forest Research Institute (BFRI) and local project staff. From the Forest Department, one Assistant Conservator of Forests was allocated to take part in the process. From the BFRI, the heads of Heads of Forest Inventory Division and Soil Sciences Division were both engaged in conducting field work as required. The Soil Research Institute in Dhaka was earmarked to test the organic carbon content in the forest soils. A financial sector specialist was subsequently added to the team to explore financing opportunities under the voluntary carbon market. The team was led by the Protected Area Management Specialist of IRG's Nishorgo Support Project.

Given the cumbersome bureaucratic approval procedures applicable to Clean Development Mechanism (CDM) projects from the Designated National Authority (DNA) in Bangladesh, the Project decided initially to target the voluntary carbon markets (See Taiyab, 2006 for

details) for sale of the Chunati carbon. Nevertheless, so as to keep all future options open, most of the CDM-relevant guidelines for baseline, measurement and project description would be followed. It was envisaged that in addition to the Sanctuary's core zone (7,764 ha), nearly 3,000 ha of Reserve Forest in the surrounding landscape zone would be included in the inventory process so as to generate recommendations for wider participatory planting activities such as buffer plantations. As work on the carbon project got under way, the project team

The Chunati Sanctuary's deforested hills offer ample scope for carbon sequestration combined with improved elephant conservation and poverty reduction. [Md. Tarek Murshed]

assumed that voluntary market financing would be obtained without great difficulty, albeit at a lower price than for CDM-approved projects.

An intensive search was made for collecting relevant literature, particularly on the development of forestry projects that meet the criteria as set under the CDM of the United Nations Framework Convention on Climate Change (UNFCC). Relevant guidelines for developing projects under the land use, land use change and forest sector as issued by the Inter-Governmental Panel on Climate Change (IPCC) and other international organizations including Winrock International were reviewed. A published paper from the Indian Institute of Sciences (on a forest carbon project for the Indian state of Andhra Pradesh) proved to be the most useful model and approach for adaptation to the Chunati case due to similarity of forestry issues. Additional information was obtained from the online resources of The Energy Research Institute (TERI) in India and from International Resources Group (IRG), in Washington, DC.

The project development began in early 2007 by field testing suitable tools and methods. The project was divided into four principle phases: design, field data collection, analysis and report writing. During the design phase, reconnaissance visits were made to the Sanctuary using existing management plan maps and other official records. Stakeholder consultations were held in and around the Chunati Wildlife Sanctuary to understand land status, physical location and boundary of the project activities. Based on the field assessments, it was decided not to include the Reserve Forest lands outside the core zone of the Sanctuary in the project design. While this buffer zone would have been helpful for complementary livelihood activities, it became clear that the lands were not physically available for planting due mainly to encroachment. As a result, buffer plantations as envisaged initially were not included in the recommended reforestation strategy.

Of the full Sanctuary area of 7,764 hectares, only 5,000 were targeted for project intervention. These were lands deforested prior to January 1, 1990, the cutoff date used under CDM. Within the defined project boundaries of the Sanctuary, carbon stock changes and other attributes

have been estimated and will in future be monitored. Within the geographical boundaries for proposed reforestation activities, as delineated on the maps, changes in Greenhouse Gas emissions and removal of CO_2 attributable to the proposed reforestation interventions were to be measured.

The nature of carbon pools (e.g. soil organic carbon, above-ground biomass, below-ground biomass, and on-ground biomass) was assessed and monitoring parameters were discussed with FD and the two relevant Co-management Committees (CMCs). Technical description of the proposed project including listing of existing land-use systems, land tenurial status, and potential mitigation options and their technical description were analyzed for different management categories. A cost effective monitoring strategy was worked out by focusing on possible roles of the existing CMCs. Possibilities for leakage and non-permanence of sequestered carbon were examined and suitable measures were suggested in order to reduce the ensuing risks.

An appropriate mechanism was suggested for monitoring the identified carbon pools during the implementation of the project interventions. Suitable methods for carbon inventory in baseline (without project situation) and mitigation (with project situation) scenario were reviewed and applied by following an inexpensive sampling strategy. The estimation of growing stock changes in volume, biomass and carbon contents was attempted both for the establishment of baseline and mitigation scenario for each of the identified mitigation options for reforestation

Field data collection was necessary to generate precise estimates of carbon pools. After due discussions and field validation, a field manual was prepared for the field inventory. Two field teams, each comprising four investigators from a mixture of the BFRI, FD and NSP were trained for forest inventory. Only one field team, by contrast, was considered necessary for collecting soil samples and analyzing soil profiles. Field formats for collecting field data were developed after field testing and validation. In-house project development capacity was targeted within FD and the two CMCs in order to ensure sustainability. On the job trainer's training was imparted to the Assistant Conservator of Forests, who was tasked to help coordinate the training of other FD staff and CMCs. Field training for forest inventory included how to lay out sample plots, and assess height, basal area, girth, species, etc.

Field inventory data was computerized for future use. Growing stocks were estimated for each of the nine land-use categories by using the field data and growing stock models as developed by the BFRI. Carbon sequestration rates were then estimated by following the methods as developed under CDM/IPCC procedures. Soil carbon analyses were done in the laboratory of the Soil Sciences Division of BFRI as such analyses were found costly if done in the Soil Research Institute (SRI), as planned initially. A generic project document was prepared in consultation with key stakeholders including the staff of FD, CMCs, BFRI and NSP. Formal presentations were made to senior FD and BFRI staff, and the CMCs at various stages of the project development and the final document incorporated their valid suggestions and comments.

One of the persistent issues of discussion during preparation of the pilot carbon project was the eventual role of the two relevant CMCs in managing and benefiting from the proposed emissions project. With formal recognition of the Chunati CMCs as "co-managers" of the

Sanctuary, their role has become central to any development project undertaken in the Sanctuary. However, the land itself remains under the legal jurisdiction of the Forest Department under the provisions of both the Wildlife (Amendment) Act 1974 and the Forest Act 1927. The Forest Department sits on the CMCs (as Member Secretary) thereby retaining a key role. The central issue of discussion was how to channel future carbon investment project resources. Should they be transferred directly to the CMC itself, directly to the FD, or allocated to the CMC but only through the FD?

During execution, the Project team decided to modify the designated roles of these two groups based upon the targeted financing body. When packaged for CDM approval, the FD has been designated as the primary recipient of investment resources required for reforestation, with an additional allocation going to the CMC for livelihood activities. This formulation was due to the perceived necessity when the CMCs were formulated for the Government to be an implementing partner. In addition to these two actors, oversight and capacity support roles were also given to a leading NGO working in the area of Chunati, with a proposed role also for the Arannayk Foundation, a private national foundation established to conserve tropical biodiversity in Bangladesh. The role of the NGO from the area would be to provide local oversight, while the national foundation would provide a higher level of oversight and quality control. The local NGO was chosen because of its own high level of transparency and established credentials, and also because it has worked for the past five years to build the capacity of these two CMCs.

The generic project document was proposed for funding to different multinationals and donors having their operations in Bangladesh. As the issue of certification was raised by some of the investors, as an after-thought it was decided to submit the document to possible certifiers who are active in the climate change sector. The two main types of applicable standards for this project include the Gold Standards (as developed by the Worldwide Fund for Nature (WWF)) and the Community, Conservation and Biodiversity Alliance (CCBA) standards. Since the Chunati project emphasized biodiversity conservation through local community participation and benefit-sharing, the CCBA standards were found more relevant and the generic project document was prepared using those standards and submitted for certification.

Though the document followed the CDM methodology, it did not originally follow the Project Development Document (PDD) format of the CDM. CCBA staff subsequently suggested that we reformulate the document by following PDD format as most of the certifiers find it easy to evaluate projects based on this format. Accordingly the project document was modified by including additional information as per the requirement of CDM PDD, particularly on monitoring for leakage and non-permanence.

The CDM-compliant project – now entitled "Mitigation of Greenhouse Gas Emissions Through Co-Management of Chunati Wildlife Sanctuary" – has now been formally submitted by the Forest Department to the Ministry of Environment and Forests (MoEF) with a request that it be considered for endorsement by the DNA, in this case a committee chaired by the Secretary of the MoEF.

With project design completed, multiple inquiries have been extended to organizations with an expressed interested in financing carbon offsets or listed as voluntary market traders. This

list included HSBC Bank, Standard Chartered Bank, Singapore Airlines, Emirates Airline, Japanese International Cooperation Agency, and some multinationals engaged in the country's energy sector. While interest was expressed by a number of them, the oft-repeated response was an unwillingness to invest in forest projects due to leakage and monitoring difficulties, as well as doubts about the scientific accuracy of the methods used to calculate the carbon offsets generated by such projects. In general the perception is that forestry projects are "controversial" and better avoided, especially when there appear to be other carbon offset projects available which are more certain and more easily quantified. It turned out to be more difficult to obtain interest from this voluntary market than had originally been assumed. However the effort to convince, and in a sense, educate potential investors about the Chunati project's potential as a source of sizeable carbon offsets continues.

Subsequently, some interest was expressed by bi-lateral and multilateral development agencies including the GTZ, and the World Bank's BioCarbon Fund. Preliminary discussions have been undertaken with these organizations. By the time of preparation of this chapter, no firm commitments had yet been obtained for financing the Chunati project.

Lessons Learned

A number of lessons have emerged from this pilot effort to develop a carbon project for Chunati Wildlife Sanctuary:

Although an increasing number of carbon market traders and consultants offer services to package a project, it is feasible, less costly and more sustainable to build in-house capacity within partner institutions. With the rapid increase in carbon project development and the expanded use of the web for disseminating documents and approaches, it proved relatively straightforward to identify methodologies that could be adapted to this pilot carbon project. Baseline and inventory work required technical expertise in forestry, to be sure, but the process once undertaken required less in terms of complex forestry expertise than it did the willingness to work through a new approach. Based on this first forest carbon project experience, training and extension materials can be prepared for replication of the approach within the Forest Department and the NGO and consultant stakeholders.

Although voluntary carbon market project design requirements are less stringent than CDM, it is most cost effective to include CDM requirements from the earliest stages of planning and writing. The avenues and probabilities for forest-based carbon project such as Chunati to be financed are changing daily. Although CDM-approval and financing for similar forest projects is now more complex than for many energy projects, this may change in the future. In addition, it became apparent to the team that a host of bi-lateral and multi-lateral programs were being announced on a regular basis (e.g., expansions to the Bio-Carbon Fund managed by the World Bank, increases to the Japanese Government Fund, and others), and most of these required some sort of CDM approval. Accordingly, it became clear that adhering to CDM requirements – while taking more time and effort than the simpler voluntary market requirements – would leave more options open for future funding.

Forest carbon offset projects in populous and poor areas such as Chunati can contribute simultaneously to multiple development objectives in addition to carbon. The Chunati project clearly delineates contributions to the following objectives: (a) quantified sequestration of CO2; (b) contributions to biodiversity conservation through restoration of the Chunati Wildlife Sanctuary and its elephant

habitat; (c) poverty reduction and livelihood improvements for local communities through buffer zone activities and revenue from offset; (d) empowerment through co-managed governance; and, (e) capacity enhancement of the government and non-government specialists involved in project design.

Management framework for carbon offset projects can include a range of both public and private partners: Deciding on the appropriate management structure for the carbon project became one of the more time-consuming aspects of the work. Standard CDM projects on government land are commonly implemented directly by the government itself. As a declared Wildlife Sanctuary under the authority of the national Forest Department, it is clear that the government needs to be a central actor. However, most potential donors have indicated that a partnership with non-government actors for implementation would contribute to increased likelihood of funding. Nishorgo's Co-Management Committees, which include both government and non-government members, should be more interesting and acceptable to potential financiers. Since the Committees themselves involve a range of fully private non-governmental organizations (Community Patrol Groups, Forest User Groups, Federations of Poor), these further enhance the acceptability of the Committee for financiers concerned about passing money to the government directly. In addition, most financing agencies or experts contacted made it clear that some third party at field level would be beneficial to ensure transparency in implementation. Accordingly, Nishorgo proposed involvement in an oversight and support role a leading regional NGO working in the area of the project as well as a national forest conservation foundation.

It proved much more difficult than expected to obtain financing from the private voluntary market, principally because forest sink projects are deemed too risky. A number of multinationals, approached for funding the project, showed initial interest in purchasing the carbon credits. However, on close scrutiny the forest carbon project was assessed by them as risky as it is characterized by high leakage and non-permanence.

Early involvement of certification organizations would be beneficial in the long-run. Because of the greater likelihood of leakage and non-permanence in forestry projects, it is useful to make initial contacts with the approved project certification agencies in order to avoid methodological issues that may not be clear to project developers in the beginning. The initial structuring and completed drafts of the 100-plus page design documents had been prepared without using certification criteria, and those documents had to be subsequently re-structured, with some new sections written. Roughly a month of working time was lost in this process.

Costs of monitoring the project can be reduced if local communities are gainfully associated with the monitoring process. Monitoring of forest carbon stocks and biodiversity within forest areas can form a significant portion of operational costs in carbon offset projects prepared from other countries. In the Chunati Project, monitoring activities are to be undertaken principally by the same Community Patrol Groups that are at the same time spending regular time in the forest areas. Such an approach would be expected to reduce monitoring costs significantly.

Conclusion

Although climate change is global in its causes and consequences, its adverse impacts are being borne inequitably in different regions and communities of Bangladesh - a riparian country very near to sea level. Climate change mitigation and adaptation opportunities in the degraded forests including Protected Areas have significant potential for the transfer of

investment funds and appropriate technology to Bangladesh, as demonstrated from this pilot carbon exercise. The Chunati carbon offset project development process has demonstrated the feasibility of preparing a CDM-compliant project for an important Wildlife Sanctuary. The cost of implementing the project is only US$ 2 million over five years against the project value of carbon credits of US$ 5.3 million (calculated at US$ 7/ton CO2). The project includes not only carbon sinks, but also restoration of degraded forest landscape through block and enrichment plantations of indigenous species, established out of the proceeds generated in carbon offset trading by gainfully associating local communities. By conserving forests through reforestation, biodiversity and water can be conserved in-situ, and rural poverty alleviated by gainfully utilizing surplus labor and land resources locally.

Future forest carbon project proposals should be developed in line with Bangladesh's national development goals as enshrined in the Poverty Reduction Strategy Paper (Planning Commission 2005) and Millennium Development Goals. Co-management of Chunati Wildlife Sanctuary offers an excellent opportunity for achieving global environmental goals by mitigating Greenhouse Gas emissions while conserving biodiversity and alleviating rural poverty locally.

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Enhancing Access to Capital within PA Landscapes through Microfinance and Grants

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The second of five core objectives of the Nishorgo Support Project and the Government of Bangladesh's Development Project Proforma (DPP) was to support "Interventions and Investments for Improved Ecosystem Management". IRG had proposed, and this was subsequently incorporated into the Nishorgo Support Project, a "Landscape Development Fund." The intended use of this Fund was described in IRG's proposal as follows:

> The IRG Team will suggest a suitable methodology (revolving fund, for example) to finance alternative income generating (AIG) and ecosystem development activities (including financial feasibility of any proposed activity). The credit system will adapt successful aspects of existing credit programs run by CARITAS, RDRS, and CODEC [IRG's original NGO partners for Nishorgo Support Project]. A revolving fund will be set up to keep these AIG activities and other ecosystem improvements going over the medium-term.

> The Government of Bangladesh recently passed the necessary orders to operationalize the Tree Farming Fund (TFF) guidelines developed under the Forestry Sector Project. A similar approach could be used to set up a Landscape Development Fund (LDF) for alternative income generation (AIG) activities. Such a Fund would provide Resource Management Organizations (RMOs) with resources for community development programs. It will receive initial funds from the project and would act as a mechanism for ensuring sustainability of project activities even after the project is over. IRG has allocated USD 300,000 as startup funding for the Fund. The LDF will be linked to other rural development programs including micro-credit activities being implemented in the project area. Short-term loans to the members of a RMO will allow their initial capital to grow and become an economic asset, thereby reducing the RMO's dependence on project funding.

The original intention in the Nishorgo Support Project, had therefore been to enhance access to capital within the five Nishorgo pilot landscapes through a combination of a revolving fund as well as a grant fund for "community development programs." However, as noted in chapter 12, this concept changed; the present chapter elaborates the evolution of this two-part strategy at Nishorgo sites and draws a number of lessons.

Starting Assumptions and Subsequent Adaptations

Microfinance at Nishorgo Sites

The IRG proposal for Nishorgo Support Project suggested that microfinance, or revolving funds, might be put in place, to be managed or overseen by what became the Co-Management

Organizations (CMOs). By 2004, CMOs were still in an early stage of development, and the Nishorgo team was forced to review the feasibility and practicality of pursuing CMO management of microfinance. Indeed, the Nishorgo team reviewed the approach to use of microfinance more generally, whether managed by CMOs or by participating partner NGOs.

The team recognized that expecting newly formed CMOs to act as microfinance institutions was unrealistic, in light of – among other factors – the complexity of such an effort and the time it would take to build such capacity. The team recognized that Bangladesh had ample microfinance delivery systems in the rural areas, so viable opportunities for expanding economic activity might come from other institutions rather than being directly supplied by the CMOs using LDF resources. In light of both the constraints of the nascent CMOs and the capacity of other microfinance institutions, by late 2005 the Nishorgo effort dismissed the idea of the CMOs directly managing microfinance themselves.

However, the question remained of whether the Nishorgo effort should allocate funds to partner NGOs for microfinance, or establish agreements with existing microfinance providers under which they might allocate their own microfinance to Nishorgo beneficiaries.

Concerns about Microfinance Delivery Approach

As the project evolved, the need for accessing capital at landscape level remained. The Nishorgo team reviewed the feasibility and appropriateness of allocating funds directly through its partner NGOs for use as microfinance. Nine concerns arose over this.

Dangers in Asking the Same Institution to do Both Microfinance and Social Mobilization

There is an inherent contradiction between interventions focused on social empowerment through awareness building and motivation and others focused on microfinance. The former demands a more interpersonal communication approach concentrating on providing social support to raise the capacity of participants in conserving Protected Areas. The latter, on the other hand, is based on the principles of enterprise viability, giving loans and recovering the principal and interest, often treating the beneficiaries harshly if they fail to conform to established norms and discipline of the microfinance business. The blending of the two paradigms was considered likely to be counterproductive, particularly when the primary focus of the Nishorgo effort was to change the mindset of community members through awareness building and motivational campaigns.

Once an NGO focuses on microfinance, its abiding concern revolves around getting new borrowers, disbursing more funds, and collecting repayments regularly. It has commonly occurred that NGOs in Bangladesh that began with a social empowerment agenda dropped that agenda once they entered into microfinance (Feldman: 2003). In other cases, NGOs have separated the staff and divisions involved with microfinance from those involved with social empowerment and mobilization, often for administrative reasons. But when the interventions are managed separately, it has had the effect of distancing economic interventions from those that involve advocacy or empowerment.

In Nishorgo's experience during the first and second years of implementation, the NGO partners assumed that they would be directly providing microfinance, based on the their

understanding of text of the IRG proposal (quoted above). The Nishorgo team observed that NGOs focused on forming groups, and the assumed role of introducing microfinance drove their interactions with communities. This resulted in more time being allocated to user group formation (the ultimate lending group for microfinance) as opposed to building the larger and more complex co-management bodies: the CMOs (both Councils and Committees).

Those Doing Forest Extraction Typically are Ultra Poor, and this Group is not Easily Targeted Through Microfinance Programs

One of the central threats to forest regeneration is the constant combing of the forest for woody biomass of any kind, carried out by thousands of ultra poor individuals, predominantly women. These ultra poor, often surviving hand-to-mouth, lack the ability to save regularly and be good candidates for microfinance. Given their socio-economic status, neither our Nishorgo NGO partners nor the other major microfinance providers typically target this group. Their extreme poverty makes it hard to work with them. Accordingly, it would have been difficult to ensure that Nishorgo's proposed microfinance ended up in their hands.

Risks to PA Resources from Inability to Repay Loans

Throughout 2004 and 2005, the Nishorgo team heard repeated claims that many individuals who could not pay their microfinance loans from BRAC, ASA, and other microfinance institutions (MFI) were turning to illegal felling and clearing in order to repay loans. We became increasingly concerned that allocating project resources to NGO-led microfinance might exacerbate this problem and have a negative backward impact on the PAs.

Partner NGO Staff Costs for Implementing Microfinance

Pursuing a microfinance approach as part of the Nishorgo approach would have had considerable implications for staff costs of the Nishorgo Support Project. We calculated that one Field Organizer (Nishorgo's lowest level field personnel) could reasonably meet with two groups per day, that each group would have an average of 20 members, and that the Field Organizer would meet with each group once per week (the standard NGO approach). Under these assumptions, a single Field Organizer working just on microfinance would only be able to directly impact 240 households. At the time, Nishorgo had four Field Organizers at Lawachara National Park, so if they concentrated only on microfinance, they would not directly reach even a thousand households within the entire landscape, and they would have little time left for other social mobilization activities.

In light of the time required to execute microfinance, the Nishorgo team recognized that its opportunity cost would be a reduction in time allocated to core issues of governance and strengthening of the fledgling CMOs.

Length of Time Required to Transfer Microfinance to Local Institutions

When microfinance is allocated under USAID contracts, the entire allocated revolving microfinance funds must be transferred out of the project team and managed by the beneficiaries prior to projected closure. This requirement created additional issues for Nishorgo's approach.

As the Nishorgo team looked at the NGO-led microfinance option in 2004 and 2005, it seemed unlikely that the NGOs would be able to build up the local groups to take over complete operation of microfinance activities before the planned project end in May 2008. Under the USAID MACH project, the NGO Caritas had managed a microfinance fund, but it transferred the funds to community organizations only after eight years, a luxury that Nishorgo would not have.

Government Distrust of and Meddling with Microfinance

Few isssues stimulate greater antagonism between the Government and NGOs than the issue of microfinance, and the central issue involved is the loan terms required by NGOs. Nishorgo was a Government-approved project, and we saw increasingly over the years 2004 and 2005 that a microfinance program led by the team would cause us to be caught in a direct conflict between the interests of our partner NGOs to operate an economically viable finance program and the interests of the Government in ensuring that usurious rates were not used. For example, in 2005 when microfinance was still under consideration, the Minister of Environment and Forests, in a Nishorgo Steering Committee meeting, stated that he would not accept any interest rate over 8 percent. At the same time, both CODEC and RDRS were of the opinion that any interest rate under 10 percent was neither sustainable nor feasible for the NGOs or the ultimate beneficiaries.

The history of the Forestry Sector Project (FSP) made this antagonism on microfinance even more clear, as the Government had for years raised issues with implementing FSP NGOs about what an acceptable rate of interest should be, and over how much the NGOs would benefit from the microfinance resources made available to them (Forestry Sector Project 2001).

Criteria for Microfinance Beneficiary Selection versus Criteria for Conservation Beneficiary Selection

When NGOs form groups with the end of implementing a microfinance program, a number of standard criteria are applied in the selection process. Critical criteria include that the groups should be poor, should have a minimum level of social cohesiveness, and should have some ability to save regularly and to repay loans. These microfinance-oriented participant criteria, however, were not naturally compatible with the targeting of conservation related activities.

The Nishorgo effort focused on identifying those ultra poor who depended on the PAs for their livelihoods. Initially, the partner NGOs began to form groups with the traditional microfinance criteria in mind. Later, they were reoriented towards identifying those ultra poor that were either directly dependent on the PA resources or the poor who could help protect neighboring PAs from illicit felling through community patrolling. This implied a different strategy for selecting and working with participants in the landscape, and thus a different target group.

Opportunities to Leverage Microfinance from Existing Local Microfinance Institutions (MFIs)

At each Nishorgo site, no less than three MFIs were present in 2005 with full-scale operations. These included BRAC, ASA, and Grameen Bank, with a host of more local NGOs also

providing the service. Initial meetings with ASA and BRAC made it clear that they were indeed interested in providing credit to worthy beneficiaries in Nishorgo sites. Subsequent discussions with the Nishorgo NGO partners themselves (CODEC and RDRS) made it clear that they would consider allocating their own microfinance in support of the Nishorgo effort, but managed by staff outside the Nishorgo field team.

Discussion and Implications

Considering these concerns and issues, the Nishorgo team opted at the end of 2005 to close any discussion of providing microfinance from Nishorgo funds. Nishorgo would focus on strengthening the new CMOs. This included creating economic opportunities, but would be achieved by leveraging access to microfinance resources available from sources outside of Nishorgo funds.

Accordingly, in 2006 and 2007, the Nishorgo team worked out agreements under which partner NGOs would provide their own microfinance funds and staff in support of Nishorgo goals. In the three northern sites, RDRS brought in its own microfinance staff and resources from its Rangpur office, with a special focus on indigenous communities in and around the Nishorgo PAs. This microfinance contribution of RDRS has continued after the closure of the Nishorgo Support Project. In the southern sites, the project team established a Memorandum of Understanding with the Cox's Bazar-based microfinance provider Mukti, under which they would allocate their own microfinance to viable user groups that had been formed by the Nishorgo team.

At the same time, the Nishorgo team would maintain its focus on putting in place a Landscape Development Fund that would provide matching grants to support community-targeted landscape investment capital, as reviewed below.

The Landscape Development Fund Grants Program

The procedures manual for use of the LDF (Nishorgo Support Project 2006) was submitted to USAID in 2006, and approved in early 2007. The LDF grants program ran for just over one year.

The main objective of the grants was to provide support to the CMOs to implement broad-based community initiatives that would provide community incentives for biodiversity conservation and economic growth. The LDF activities were overseen by the Nishorgo Support Project team. Potential grantees included the eight existing CMOs at the time, covering: Lawachara National Park; Rema Kelanga Wildlife Sanctuary; Satchuri National Park; Teknaf, Whykheong, and Shilkhali (all Teknaf Wildlife Sanctuary); and Chunati and Banshkhali (both in Chunati Wildlife Sanctuary).

Each Co-Management Committee submitted project proposals to a Grants Review Committee (GRC) that included the Nishorgo Support Project Chief of Party or his designate, the Forest Department's Project Director, and the IRG Grants Coordinator. Observers to this GRC included the two Regional Coordinators for the three northern and five southern CMOs respectively, as well as the USAID COTR.

The project proposals were reviewed in two stages. They were initially scrutinized by a Regional Grants Officer and then by the IRG Grants Coordinator to ensure that they meet minimum standards. In a second stage, proposals were formally reviewed by the GRC where they were approved, denied or received comments from the GRC. GRC members reviewed LDF project proposals based on the strategic fit with the objectives of the LDF and based on best value. Projects accepted by the GRC were forwarded to the USAID Cognizant Technical Officer for official approval.

Between April 2007 and June 2008 36 projects were approved with total grant expenditures of 10,863,150 Taka and CMO counterpart contributions of 2,228,981 Taka.

Out of these 36 LDF projects, eight were either terminated or only partially completed. All these concerned construction on FD PA land, with six of those eight including shops that were to have been operated by and for the CMO. These structures were delayed due to objections raised by the Forest Department over facilities that would be owned by CMOs located on government lands, and those objections could not be resolved before the Nishorgo Support Project closed.

Landscape Development Fund Grants Awarded to Nishorgo Co-Management Organizations and Completed in the Period April 2007 through June 2008

Grant Title and Activity	Recipient CMO	Grant Amount (Taka)
Entrance road repair in Satchuri Tipra Bosti through a bamboo stair	Satchuri	34,000
Strip plantations along 9 km of roads under Paikpara and Dewargach Union Parishads to reduce forest dependency and generate new forest resources	Satchuri	202,365
Strip plantations along 12 km of roads under Kamalganj Union Parishad to reduce forest dependency and generate new forest resources	Lawachara	269,318
Earth work for filling up ditch in road and construction of a retaining wall through community participation	Lawachara	573,056
Renovation of lake to create alternative income through fish culture for Mochoni Community Patrol Groups	Teknaf	653,424
Strip plantation along 25 km of roads through community participation	Rema Kalenga	562,125
Three Nishorgo libraries with range of books for adults and youth	Banskhali	329,733
Rural infrastructure development program	Chunati	337,841
Construction of a wooden bridge from Chanbari to Debrabari Tipra Bosti road by community participation	Rema Kalenga	977,588

Grant Title and Activity	Recipient CMO	Grant Amount (Taka)
7 km strip plantation along Whykhong Union Parishad roads to reduce forest dependency and generate new forest resources	Whykheong	168,869
3 km roadside plantation to meet fuel wood and timber needs of local stakeholders of Baharchara Union Parishad	Shilkhali	76,000
10 km CMO participatory forestry project	Chunati	220,000
Two environmental libraries with range of books for adults and youth	Shilkhali	220,133
Five Nishorgo libraries with range of books for adults and youth	Teknaf	548,924
Four Nishorgo libraries with range of books for adults and youth	Whykheong	454,126
Milk cow rearing program for Community Patrol Group members	Lawachara	492,250
Milk cow rearing program for Community Patrol Group members	Satchuri	242,982
Income generating program for six Community Patrol Groups through fishing by tana jal in the sea	Shilkhali	459,440
Biodiversity preservation through e-governance (for computer use and access by the community)	Lawachara	105,979
Biodiversity conservation through e-governance (for computer use and access by the community)	Satchuri	239,374
Establishment of tourists shop at Kalenga site, Chunarughat	Rema Kalenga	236,064
Biodiversity conservation through e-governance (for computer use and access by the community)	Rema Kalenga	238,758
Biodiversity preservation through e-governance (for computer use and access by the community)	Whykeong	103,000
Biodiversity preservation through e-governance (for computer use and access by the community)	Teknaf	106,100
Biodiversity conservation through e-governance (for computer use and access by the community)	Shilkhali	106,100
Biodiversity preservation through e-governance (for computer use and access by the community)	Chunati	96,872
Employment creation for women through toloi (mat) making	Banshkhali	401,500
Biodiversity preservation through e-governance (for computer use and access by the community)	Banshkhali	104,217
Total funds in completed LDF grants		**8,560,138**

Elders of the Dolubari village southwest of Lawachara received a grant from the LDF for this improved access path for rickshaw. [Nishorgo Support Project]

Grant made to Rema Kalenga Co-management Committee for roadside plantations. [Philip J. DeCosse]

Lessons Learned

The multi-year process of working to increase the availability of capital for investments in Nishorgo PA landscapes led to a number of lessons.

The approach and process for NGOs to directly implement microfinance programs create conflicts with the empowerment objectives of co-management. When Nishorgo partner NGOs believed that they would directly implement microfinance with project staff and resources, then the preparation of communities to receive that microfinance became a driving force defining field level organization. The NGOs placed high priority and staff allocation to creating Forest Resource User Groups with the intention of extending microfinance to those groups later on, with an emphasis in those group discussions on the livelihoods opportunities that would become available to the groups. This allocation of resources in 2004 and 2005 was associated with reduced attention to the core empowerment and rights issues necessary to support cohesive community involvement in PA co-management. While formation of such livelihoods-based groups is important to co-management, the attention given to it due to the expectations of microfinance resulted in too little emphasis on governance.

Empowerment, as defined within the Nishorgo team in these early years, tended to be understood as economic empowerment, and often through the provision of microfinance. The result of this focus on economic empowerment was a reduced willingness of the Nishorgo team to allocate energy and resources to the messy and conflictual processes of helping nascent CMOs assert the rights they were obtaining through Government policy decisions. Ensuring that the partner NGOs did not in the end directly implement microfinance created the additional benefit of pushing them to focus more directly on this empowerment process.

Expecting any NGO to simultaneously support both economic empowerment and political empowerment in the field requires careful management and oversight. Certainly, the easier course for NGO staff is the economic empowerment route. It is known and has been practiced by many NGOs throughout Bangladesh. But the process of working with a mix of government and community representatives is far more complex and alien to the standard operating

procedures of NGOs in Bangladesh. Succeeding at implementation of both dimensions of empowerment requires careful planning and oversight.

The model of establishing such leveraged partnerships within co-management target areas could viably be continued at other sites. Once the Nishorgo team had worked out modalities for a partnership with existing site-level microfinance providers, capital did become available to Nishorgo Forest Resource User Groups without the concomitant costs to the team's focus on other empowerment activities.

The Landscape Development Fund grants program demonstrated the effectiveness of introducing capital within the landscape in ways that would at the same time improve the well-being of the affected communities and raise the status of the Co-Management Organizations that were implementing and managing the LDF grants. Response from both communities and the Forest Department to the LDF program were extremely positive. The CMO designed proposals and managed funds successfully, and their interventions raised the CMO profile as a social organization working in support of the community.

Other similar grant funds can and should be sought on behalf of the CMOs at existing and new co-management sites. With the kind of targeted capacity building provided by the Nishorgo team, CMOs would be able to expand their ability to manage similar small grants throughout targeted areas. Recent initiatives by the Government of Bangladesh to make available challenge funds for climate change adaptation and other purposes to government agencies, NGOs, and community organizations offer opportunities for CMOs in PAs and other community organizations in wetlands to obtain funds for improving local infrastructure and natural resource management provided the mechanisms are simple and transparent.

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Lawachara National Park
[Sirajul Hossain]

18
Energy Use and Options in the Protected Areas

Nasim Aziz, Khalequzzaman and Safiqur Rahman

The Rapid Rural Appraisal and Participatory Rural Appraisal reports completed just after inception of the Nishorgo effort (Mollah *et al.*, 2004a-e) found that households bordering the Protected Areas (PAs) obtained their energy for cooking principally from fuel wood directly extracted from neighboring forest areas. In addition, the reports noted presence of brick fields bordering the two southern PAs – Chunati Wildlife Sanctuary (WS) and Teknaf Wildlife Sanctuary (GR). In multiple cases brick fields were located inside or adjacent to the PA for ease of access to fuel to fire the kilns. Fuelwood for the kilns was collected by local day laborers, typically women, children and unemployed men. In areas of Teknaf near the *Rohinga* camps[1], the *Rohinga* population figured prominently among the fuel wood providers to neighboring brick fields.

Available energy use statistics confirmed the predominant use of forests to supply fuel wood. An early study from 1981 showed that – at that time – 12 percent of fuel wood supply came from forests (Government of Bangladesh, 1985).

The Bangladesh Bureau of Statistics (BBS) data of 2004 from Cox's Bazar District – where 90 percent of household energy was derived from wood – captures the approximate behavior at the southern Nishorgo sites. In the two Districts in which the northern Nishorgo PAs were located (Hobiganj and Moulavibazar), more than 85 percent of household energy came from wood, bran or straw (see Fig. 1). A later (2007) household survey at Nishorgo sites confirmed the predominant use of wood as fuel for energy, across all PAs (see Fig. 2).
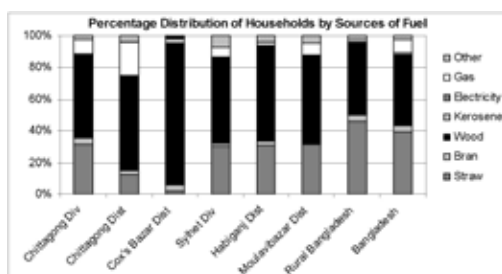

Figure 1. Percentage distribution of households by sources of fuel by Division and District (Source: BBS 2004)
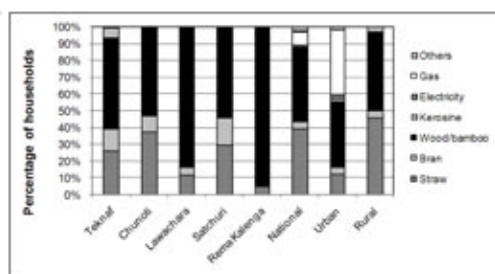
Figure 2. Percentage distribution of households by sources of fuel by Protected Area (Source: Hossain 2007)

In this context the Nishorgo team wanted to explore options for reducing the level of extraction of fuel wood from the PAs through use of alternative energy technologies. The purpose of this chapter is to review the process and approaches pursued by the Nishorgo team, identifying in the process the strategic adjustments that were made during implementation. The chapter closes by drawing a number of lessons learned.

[1]   Camps of refugees of Rohingan origin displaced from nearby Myanmar and established in the early 1990s.

Starting Assumptions and Subsequent Adaptations

Technical Complexity and Partnership with GIZ in Strategy Development

Initially, the project team assumed that the priority should be introduction of fuel-efficient stoves throughout the target landscapes. The technology for fuel efficient stoves had been studied and refined by the Bangladesh Center for Scientific and Industrial Research (BCSIR), an organization generally recognized to have invented the first improved cooking stove in Bangladesh. A formal involvement of the BCSIR was not possible, for the bureaucratic reason that it would have required a revision in the project document to allow formal participation of another government institution.

Yet, recognizing the need to bring on better technical expertise than existed within the Nishorgo team, the Nishorgo Support Project looked for other experienced partners and found that the German Technical Co-operation (Deutsche Gesellschaft für Internationale Zusammenarbeit - GIZ) had been working with the Government and NGOs on energy issues, and possessed the necessary technical expertise. The GIZ project team for the Promotion of the Use of Renewable Energies (PURE) project agreed to carry out an assessment of the energy use pattern and the energy demand and supply situation of households, commercial and industrial enterprises. The study would target energy patterns around Chunati Wildlife Sanctuary and Teknaf Wildlife Sanctuary and provide recommendations on promoting improved efficiency of energy end-use devices and fuel switching options.

Prokaushali Sangsad Ltd (PSL) carried out the study for GIZ under the PURE project. This study "Appraisal of Patterns and Options for Change of Energy Use in and around Selected National Parks" (Prokaushali Sangsad Ltd 2005) validated the qualitative information obtained during initial Nishorgo investigations. It generated quantitative estimates of fuel wood used per household at the two southern PAs at 10 kg/day in the dry season and 14 kg/day in the rainy season. This amounted to a per capita use of 450 kg/person/year for dry season and 650 kg/person/year for rainy season. The study also explored and measured the numbers and energy use levels of small energy-intensive enterprises (restaurants and other food shops) as well as the numbers of larger residential consumers (*madrasa*[2] and schools in particular) and brick fields.

Almost 99 percent of the sample households (in total 357, 137 from Chunati WS and 220 from Teknaf GR) were found to use wood for cooking purposes in conjunction with other biomass fuel. In Chunati WS 65 percent of the households were found to collect biomass fuels from either the Wildlife Sanctuary or other nearby Reserve Forest lands, while 19 percent were found to collect fuel from trees grown in homesteads.

During the study PSL organized a three day "Energy Fair" at the Chunati site in March 2005, where a wide range of energy technologies, including solar cookers, solar lighting, biogas, and improved stoves were demonstrated. The fair was attended by an estimated 8,500 residents from the immediate surroundings of Chunati WS, most of them women. Results from

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[2]   Religious schools

the fair indicated that the improved stove was of the greatest interest to attendees. Taking this finding into account, the PURE team of GIZ began a subsequent phase of refining and testing the stove technology with households around the two southern PAs.

Visitors at the Energy Fair looking at various energy technologies. [Philip J. DeCosse]

The PURE team and the Nishorgo team had planned to introduce energy technologies in such a manner as it would create opportunities for entrepreneurship among inhabitants of the target areas. Training in the stove technologies assisted in identifying enterprising young men and women who might be involved in both extension of the technology and – for a small fee from recipients – installation of the stoves within households.

The Nishorgo team initially started expansion of its stoves via its implementing partner in that region (CODEC) to Forest User Group members (groups formed by the Nishorgo Support Project), as well as community patrol groups and other interested households. Demonstrations were conducted for a total of 500 households. The trainees received 200 Taka from the recipient for each stove they installed, while the material costs (around 350 taka for chimney, galvanized iron net and cap on the top of chimney) were financed by the Nishorgo Support Project.

During piloting, a number of important technical issues emerged which needed to be addressed. Although women appreciated the value of having smoke and heat taken out of the kitchen area through use of a chimney, they did not like the aluminum tubing used for that purpose, principally because its extreme heat created a danger for children in the kitchen area. Accordingly, a concrete chimney was used instead. Women also did not like the two large burner design, and preferred a three burner design with one small burner used principally for warming. These and other adaptations arose through the testing period.

By mid-2006, 300 stoves had been installed in the homes of residents in and around Chunati WS and Teknaf GR. Demonstration of improved stoves also started in the northern PAs. But the administrative cost of building awareness and increasing adoption rates was high to the Nishorgo Support Project. Despite GIZ support, Nishorgo team efforts were being drawn away from other empowerment activities to focus on this energy technology work.

The PURE team also recommended use of biogas plants, initially using livestock waste. But the dispersed nature of livestock ownership around all the pilot PAs meant that biogas plants using livestock waste would not be feasible. However, in light of the high human population density,

especially within large residential complexes such as *madrasa*, the study recommended pursuit of night soil based biogas plants.

Longer-term Partnership and Grameen Shakti

In light of the need for specialization in the expansion of access to alternative energy technologies, the Nishorgo team reached out to Grameen Shakti, a recognized social business organization with retail offices throughout the country and the explicit core objective of expanding energy efficient technologies. At the time the Nishorgo team initiated dialogue, Grameen Shakti was a partner organization of GIZ in disseminating improved stoves and biogas plants. Grameen Shakti had set an objective to sell one million improved stoves throughout the country in the subsequent year.

In April 2007, Nishorgo Support Project and Grameen Shakti, together with GIZ, signed a Memorandum of Understanding (MOU) under which Grameen Shakti would market and install improved stoves for households and biogas plants for residential madrasas around Nishorgo pilot PAs. Under the MOU, GIZ was to provide training on the technologies for the Grameen Shakti sales force, Nishorgo was to subsidize the cost of each stove, and Grameen Shakti was to allocate sufficient sales force to the areas around the five PAs. As necessary, Grameen Shakti would also provide microfinance, in particular for the installation of biogas plants. Finally, Grameen Shakti would promote growing Dhaincha (*Sesbania bispinosa*), a fast growing woody plant that can be raised around homesteads, for use in stoves.

Stove near Chunati WS in 2007. Note concrete chimney tube for exhaust. Danger to children in use of metal exhaust pipes, and easy access to concrete, brought on this adaptation. [Philip J. DeCosse]

View of preferred 3-hole design by 2008. [Nishorgo Support Project]

Under the MOU, it was agreed that stoves would be priced at 700 Taka, with customers paying 350 Taka, of which 200 Taka would go to the installer (typically a young person from a Nishorgo pilot area trained earlier by GIZ/PURE and the Nishorgo team), and 150 Taka would go to Grameen Shakti. Nishorgo would pay for the additional material (chimney, cap and iron net) worth 350 Taka as a subsidy. Grameen agreed to sell stoves to 2,000 households in the initial round.

The MOU included specific targets to establish two pilot biogas plants, the first at a large madrasa with 500 overnight residential students at Hnilla in Cox's Bazar District (just north of Teknaf GR), and the other on the west side of the Chunati WS.

By mid 2008, it had become clear that the commercial model attempted for expansion of household stoves through Grameen Shakti sales agents was not functioning as planned. Nishorgo Support Project staff found that Grameen Shakti sales agents were much less interested in sales of improved stoves, in part because the profit margins were so small and in part because of the hard work and technical finesse required in overseeing the construction of stoves within homesteads. It appeared that the Grameen Shakti salespersons preferred to focus on sales of higher cost items such as solar power products which entailed less physical labor and higher returns, and thus did not spend sufficient time with potential stove customers. Hence the number of improved stoves installed can be attributed to the effort by Nishorgo Support Project and GIZ (see following table).

Total Number of Sales of Improved Stoves and Biogas Plants Around Nishorgo PAs

Protected Area	Household	Institution
Lawachara NP	250	
Satchari NP	150	
Rema Kalenga WS	200	
Chunati WS	1,481	1 (700)
Teknaf GR	878	1 (800)
Modhupur NP[3]	1,156	
Total	4,115	

Note: number in parenthesis represents boarder of the institution.

Despite these limitations in the commercial promotion of improved stoves, a study at Chunati WS did indicate that households using these stoves used substantially less fuel wood, visited the forest PA less often to collect fuel wood, and were less involved in selling fuel wood than other households using traditional stoves (Roy 2007).

By early 2008 Nishorgo piloted a different approach for stove sales with the Mandi ethnic community at Modhupur NP. There, the entry point for technology development and sales was a locally known and respected indigenous NGO, headed by a leading woman within the community. The only participants in the process were local women. Within a few months after training, using this refined approach the trainees had gone on to sell and install more than 1,156 stoves at Modhupur. As Nishorgo ended, the optimal model for sustainable replication and sale of improved stoves had not yet been identified and additional work in refining the technology and improving the approach would be required.

The Grameen Shakti, GIZ and Nishorgo MOU on energy from 2007 worked much more effectively for biogas plants than it did for improved household stoves. Grameen Shakti had the necessary technical expertise in the design and establishment of biogas plants, and that expertise proved invaluable in the process of the two biogas plant contracts. The Nishorgo team

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[2]   A select number of co-management activities were added in Modhupur NP in 2008, including these stove opportunities. Modhupur NP was not one of the five original Nishorgo sites.

Nishorgo-supported stove in 2008. Smoke exhaust goes out by this time through the back wall. [Sirajul Hossain]

could not have built up this sort of technical expertise without unacceptably high costs.

The Al-Jamiatul Darussuna Madrasa biogas plant at Hnilla was inaugurated by the US Ambassador and local dignitaries in July 2008. The *madrasa* paid 50% of the costs of the biogas plant and two large commercial improved stoves. The madrasa at Hnilla and the *madrasa* at Banshkali – west of Chunati – claimed that their purchase of fuelwood (all coming from the two PAs) fell to 20% of levels prior to adoption of new technologies. (An image of the madrassah signboard installed during the work at Hnilla is included in the color section of this book.)

Partnering for Technology Change at Brick Fields

The Nishorgo team attempted three principle strategies for working to reduce the deleterious impact of the many brick fields located in and around the southern Nishorgo PAs. Nishorgo efforts to encourage enforcement of policy and legal controls, as well as efforts to support locally-led challenges to brick fields through CMOs, are reviewed in chapter 11. But a third avenue included efforts to introduce new brick kiln technologies to those brick fields involved.

The logic for action was a partnership attempted in 2006 and 2007 with a project being developed by the Ministry of Energy on brick field technology. A new Chinese technology was to be introduced through the project that would significantly reduce the energy costs per brick, and at the same time could only be operated using gas for firing. This UNDP-managed Global Environmental Facility (GEF) supported project for "Improving Kiln Efficiency in the Brick Making Industry" was to be replicated throughout the country.
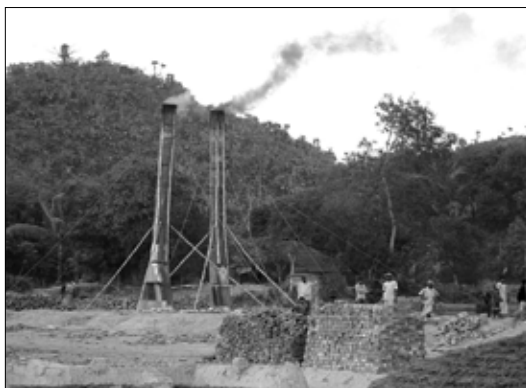
The Nishorgo team, with assistance from UNDP, worked to encourage the GEF and Ministry of Energy team to focus its efforts on brick fields located near Nishorgo PAs, so as to gain the double benefit of reduced energy consumption and improved forest conservation. But the possibility of a partnership was blocked as the Ministry of Energy was unwilling to admit officially that fuel wood was being

With the Ministry of Energy, the GEF and UNDP the Nishorgo team aimed to improve efficiency of brickfields. In the end, the effort to steer those resources towards Nishorgo sites and forest PA issues was not successful, in important part because the Ministry of Energy was not in a position to openly admit that brickfield owners were widely using fuelwood for energy. Here, in 2003, a new brickfield becoming established on the north side of Teknaf Wildlife Sanctuary. [Philip J. DeCosse]

used in brick fields. If the core problem could not be admitted, then a common solution could not be developed either. By late 2007, efforts to engage on brick field technology through this project had been abandoned.

Lessons Learned

The following lessons were learned from the Nishorgo team's efforts to expand access to improved energy technology.

Selection of appropriate household stove technology, and expansion of its adoption, was driven principally by women. While this lesson should perhaps have been obvious from the start, it is nevertheless true that the Nishorgo team (led entirely by men) had not fully appreciated that decisions concerning cooking in the household would be driven by women, and that any interventions to affect change would need to be targeted appropriately. As the project progressed, the team recognized that women needed to be at the forefront of all aspects of spreading improved stoves, from social entry points, to training leaders, to salespersons, and to installers.

Adoption of improved stoves appears to have been driven as much by perceived health benefits as by cost savings for the households. When the project began, the Nishorgo team had assumed that households would consider adopting stoves to reduce the time and money spent in obtaining fuel. The design, and in particular the chimney, allowed households to use wood, hay and other biomass for fuel with financial benefit but also much reduced smoke within the kitchen area.

The Nishorgo team did not identify a specific business model that would be appropriate for broad-scale replication of appropriate energy technologies in and around PA sites. The Grameen Shakti business model that Nishorgo supported did not appear to be appropriate for the sale and installation of improved household stoves, but was better adapted to higher value transactions such as commercial stoves and biogas. Commercial stoves and biogas plants would appear, based on the experience of Nishorgo, to have greater potential for replication by private enterprise. Future work to spread such technologies should be preceded by further research and testing to design appropriate models.

The "public demonstration and fair" model for obtaining feedback on technology proved to be even more successful than expected. Demonstration of the energy technologies through the Energy Fair at Chunati WS allowed thousands of attendees to see the technologies themselves and provide feedback and comments. The outcome of the fair was particularly effective in orienting the energy priorities under Nishorgo.

The technical sophistication of identifying and adapting appropriate energy technologies was beyond the in-house capacity of the Nishorgo team, and could not have succeeded without skilled input from energy specialists. Future interventions should not underestimate the complexity of delivering appropriate energy efficient technology.

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Elements of Co-Management: Supporting Approaches and Institutions

Lawachara National Park
[Sirajul Islam]

Institutional Capacity Development of Forest Department and Local Stakeholders

Ishtiaq Uddin Ahmad and Kazi M. A. Hashem

Capacity development was to be a central feature of the Nishorgo experiment, and included training and capacity building opportunities for the relevant staff of the Forest Department (FD) as well as those stakeholders directly engaged in co-management of the five Nishorgo pilot Protected Areas (PAs).

By early 2004, a number of core institutional capacity priorities had been identified as central to improving the Forest Department's ability to advance in co-management of pilot PAs. In memos and meetings in January 2004, the Nishorgo team recommended two urgent actions in particular, both of which make clear the institutional capacity at the time in PA management.

The team called first for urgent posting of Assistant Conservator of Forests (ACF) level officers to the Nishorgo pilot sites. At the time, there were no fully dedicated ACFs with authority to take PA-level decisions concerning the Nishorgo PAs, leaving only Range Officers at the PA level and the more distant Divisional Forest Officers at divisional headquarters, usually far from the PA. Without leadership by the FD at site level, it was clear that project interventions would be seen as distinct from the Government and would be poorly coordinated with the FD.

Starting Assumptions and Subsequent Adaptation

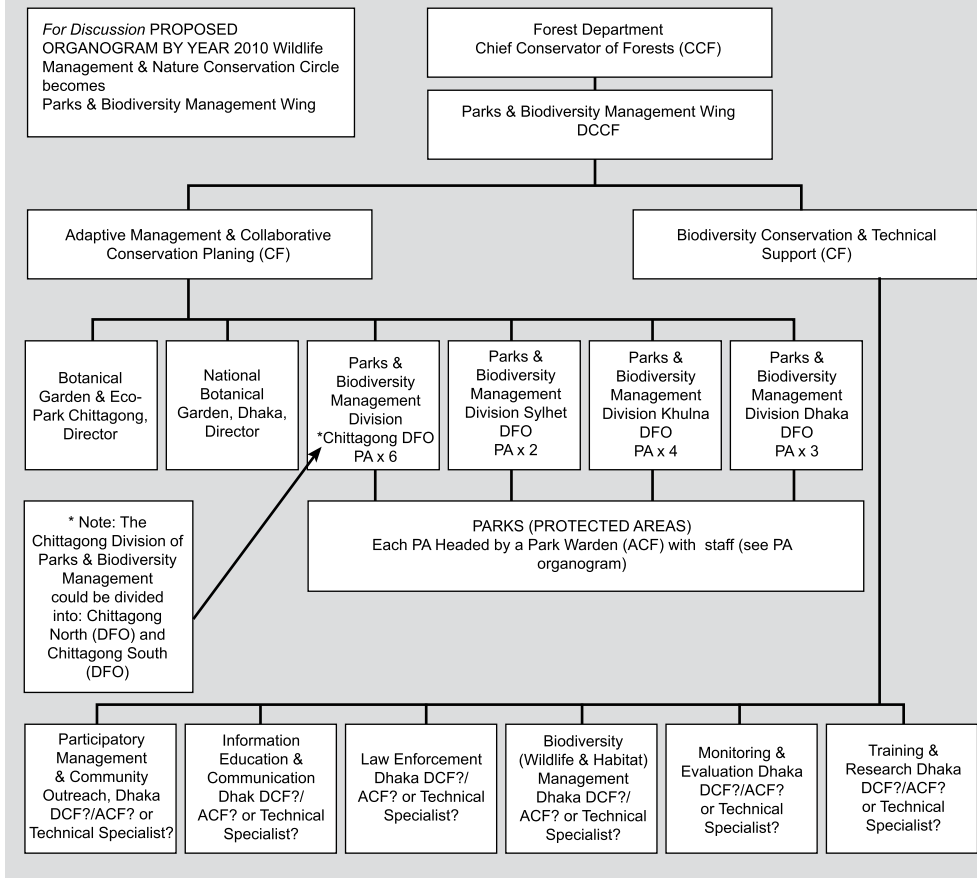### Assessing Needs for Capacity Development for Nishorgo

Recognizing that such gaps in capacity and institutional structure required a more comprehensive assessment, a team led by Drs. Arthur Mitchell and Khairul Alam, supported by Abdul Bari, conducted an assessment of the FD's institutional organization and capacity to manage the PA system. Mitchell et al. (2004) presented the following priority recommendations to the senior staff of the Forest Department:

● The FD should consider changing the name of the "Wildlife Management and Nature Conservation Circle" to "Protected Area and Biodiversity Management Circle."

● The Resource Information Management System (RIMS) within the FD should be made capable of supporting GIS needs at field and regional level, in addition to its then current capacity to work at Dhaka level.

● Specific budget codes should be included in the FD revenue budget for PA management, a practice which was not in place at that time.

- There should be a designated staff member in FD's headquarters responsible for PA system finances.

- Management plans should be prepared for all PAs.

- PA co-management activities should be initiated in PAs without waiting for change to the Wildlife Act.

- Twenty percent of PA gate fees should be held for local community benefits.

- The FD should reach out to environmental partners (such as IUCN and Bangladesh Environmental Lawyers Association) for legal support.

- The Wildlife Advisory Board could be renamed the "Protected Areas and Biodiversity Advisory Board" to emphasize the broader mandate of PA management.

- The FD should work to promote joint forest protection forces with local stakeholders.

- Work in information, education, and communication should be added to the curriculum at the Forest Academy.

- Each winter, the FD should organize a "Protected Areas Day" as a parallel and complementary event to the annual June "Tree Planting Day" that has been so successful.

- The FD should support participatory monitoring by local participants in co-management.

- The FD should ensure that greater attention is given to public-private partnerships for improved PA management.

- The FD should pursue a sustainable financing strategy, including a legal provision for local retention of PA revenue.

- The FD should recruit the technical specialists to provide cross-cutting support to the PA network.

- The FD (with the Ministry of Environment and Forests) should ensure that existing staff positions at PA level are filled.

- The FD and MoEF should agree to a revised organizational chart (see below).

The preceding organizational chart was proposed by Mitchell et al. (2004), but was not taken up by the Ministry of Environment and Forests nor the Forest Department for active consideration. The Department had just completed the long process of adding a Social Forestry Wing to its organizational structure, and staff at the FD knew that it would be a long and time-consuming process to add another new wing, especially so early into testing the co-management approach. Accordingly, the decision was made to focus on implementing co-management at field sites as effectively as possible, and only later returning, if possible, to proposing a new organizational structure within the Department.

Proposed shift in structure from Wildlife Circle to a Wing for Wildlife within the FD, from Mitchell, Alam and Bary (2004).
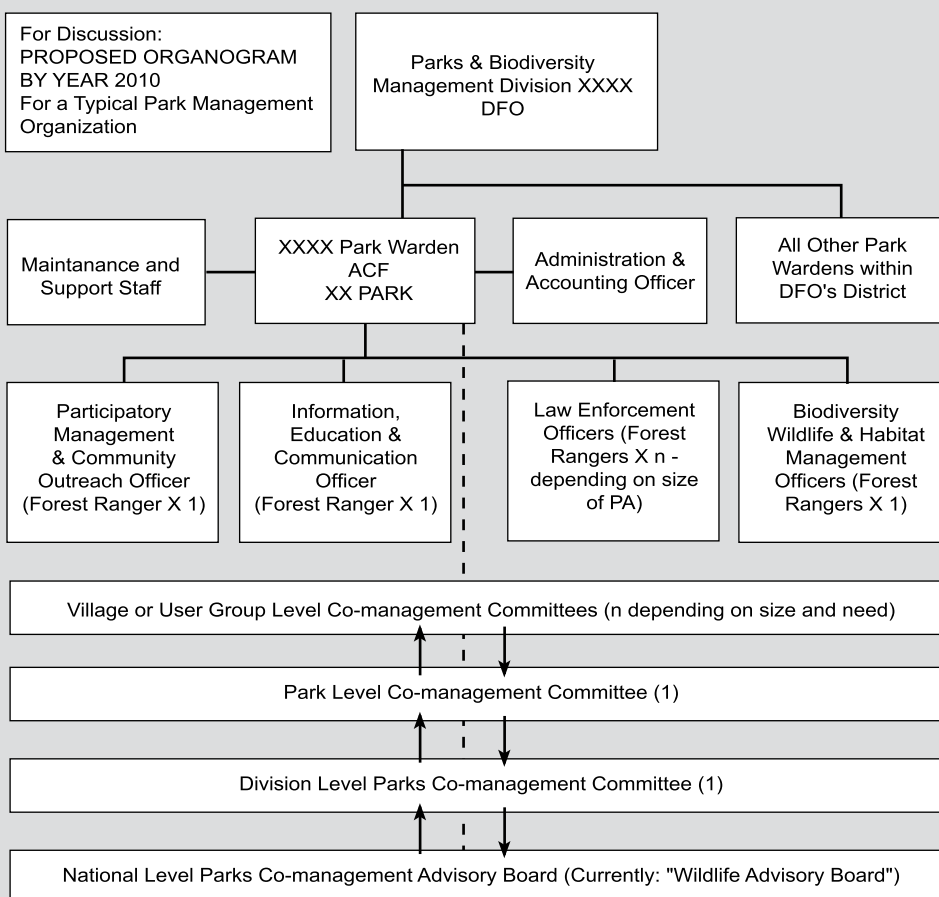
For Discussion PROPOSED ORGANOGRAM BY YEAR 2010 Wildlife Management & Nature Conservation Circle becomes Parks & Biodiversity Management Wing	Forest Department Chief Conservator of Forests (CCF)
	Parks & Biodiversity Management Wing DCCF

Adaptive Management & Collaborative Conservation Planing (CF)	Biodiversity Conservation & Technical Support (CF)

Botanical Garden & Eco-Park Chittagong, Director	National Botanical Garden, Dhaka, Director	Parks & Biodiversity Management Division *Chittagong DFO PA x 6	Parks & Biodiversity Management Division Sylhet DFO PA x 2	Parks & Biodiversity Management Division Khulna DFO PA x 4	Parks & Biodiversity Management Division Dhaka DFO PA x 3

* Note: The Chittagong Division of Parks & Biodiversity Management could be divided into: Chittagong North (DFO) and Chittagong South (DFO)

PARKS (PROTECTED AREAS) Each PA Headed by a Park Warden (ACF) with staff (see PA organogram)

Participatory Management & Community Outreach, Dhaka DCF?/ACF? or Technical Specialist?	Information Education & Communication Dhak DCF?/ ACF? or Technical Specialist?	Law Enforcement Dhaka DCF?/ ACF? or Technical Specialist?	Biodiversity (Wildlife & Habitat) Management Dhaka DCF?/ ACF? or Technical Specialist?	Monitoring & Evaluation Dhaka DCF?/ACF? or Technical Specialist?	Training & Research Dhaka DCF?/ACF? or Technical Specialist?

Of the 17 other recommendations made by Mitchell et al. (2004), those concerning internal system changes to the FD were not, in general, implemented. Those recommendations included changes to the Revenue budget accounts for PA management, as well as changes to the formal names of the Wildlife Circle and the Wildlife Advisory Board. In spite of these gaps, the majority of recommendations were followed. In addition to the recommendations included there, a range of capacity development and training exercises were undertaken by the Nishorgo team, including those reviewed below.

Cross-Visit to Protected Areas in West Bengal State, India

In light of efforts in West Bengal State to pilot co-management, and the geographical and linguistic proximity of West Bengal, a number of cross-visits were organized there, taking more than 100 Nishorgo participants over multiple trips by bus to enter in dialogue with colleagues in West Bengal (Huda 2006).

Proposed structure for a typical PA, from Mitchell, Alam and Bari (2004).

For Discussion: PROPOSED ORGANOGRAM BY YEAR 2010 For a Typical Park Management Organization	Parks & Biodiversity Management Division XXXX DFO

Maintanance and Support Staff	XXXX Park Warden ACF XX PARK	Administration & Accounting Officer	All Other Park Wardens within DFO's District

Participatory Management & Community Outreach Officer (Forest Ranger X 1)	Information, Education & Communication Officer (Forest Ranger X 1)	Law Enforcement Officers (Forest Rangers X n - depending on size of PA)	Biodiversity Wildlife & Habitat Management Officers (Forest Rangers X 1)

Village or User Group Level Co-management Committees (n depending on size and need)

Park Level Co-management Committee (1)

Division Level Parks Co-management Committee (1)

National Level Parks Co-management Advisory Board (Currently: "Wildlife Advisory Board")

Visit to PA co-managers in Indonesia gave some perspective about progress in Bangladesh. [Nishorgo Support Project]

This was a co-learning process as the key community stakeholders, Forest Department implementing officials, and Nishorgo Support Project staff members constituted the teams together. A substantial number of people were exposed in a cost-effective way to co-management in a similar setting to Bangladesh.

These West Bengal cross-visits provided the inspiration for women in Bangladesh to begin patrolling their own forests in place of the male patrols that had previously been

organized. During the debriefing after one trip in 2005, one of the women from Rema Kalenga Wildlife Sanctuary CMO said that: "If the women in West Bengal can come forward despite the obstruction from family and motivate their husbands, then so can we. Our forests belong to ourselves and we will save them." It was not long after that event that women took a greater role in Nishorgo, not least in the patrolling process.

Wildlife and Protected Area Management Diploma Training

The Nishorgo team recognized the need to improve training opportunities for FD staff at ACF level in particular, as officers of this level were expected to directly manage the PAs. Without any appropriate diploma level training in Bangladesh, the Nishorgo team reached out to explore the one-year diploma in Wildlife Management from the Wildlife Institute of India at Dehradun. The one-year program, at a cost of approximately USD 8,500, proved to be a cost-effective means of expanding the number of FD officers with awareness of PA management issues, including issues pertaining to people and visitor management, an area of expertise that was quite new to the Department at the time. Seven ACFs were funded to take this diploma course by the Nishorgo Support Project.

Study Tour to Indonesia on PA Co-Management

To further improve the co-management approach being applied in Bangladesh, the Nishorgo team determined that a cross-visit to a country in which similar co-management had been tested might be an effective way of adding momentum to co-management efforts. Indonesia had achieved a number of interesting results in this area, most notably in Bunaken National Park, but also in other protected areas. The objective of the 2007 study tour to Indonesia was thus to learn from the experiences of co-management and to adapt lessons learned to Bangladesh. A secondary objective was to make networking contacts at the Center for International Forestry Research (CIFOR) and World Agroforestry Center (ICRAF) that might support regional research and knowledge-sharing on the Bangladesh PAs.

The participants in the study tour, all from the Forest Department, observed co-management and PA management at Bunaken National Park near Manado; Kayan Mentarang National Park, near Balikpapan; Gunung Gede Pangrango National Park in West Java; and the Krui Forest Zone with Special Purpose. In addition, the team visited CIFOR and ICRAF in Bogor, for meetings with scientists working on forest and PA management.

Nature Tourism Training for the Forest Department: Targeted to Assistant Conservators of Forest (ACF) for Tourism Micro Plan Development

Recognizing the importance of tourism pressures on the PAs, the Nishorgo team organized nature tourism planning courses for PA-related staff. The course was for two weeks and 21 ACFs in six groups eventually prepared six nature tourism micro plans for Lawachara National Park, Satchuri National Park, Rema Kalenga Wildlife Sanctuary, Chunati Wildlife Sanctuary, Teknaf Wildlife Sanctuary, and Modhupur National Park. Facilitated by a planner from the Wildlife Institute of India, the course helped to generate plans that incorporated zoning for use and access; identified natural, cultural, physical and historical attractions; and predicted

probable impacts at each attraction (if nature tourism was promoted), including mitigation measures.

Nature Tourism Training for Eco-Guides

In early 2005, Nishorgo Support Project searched for a local expert who could help develop an eco-tour guide training course to initiate a conservation-based employment. However, it was not possible to find relevant expertise, and ultimately, the Nishorgo team developed a six-day training course (which also included basic bird identification linked with the bird monitoring program – see Chapter 10).

The Forest Academy at Chittagong hosted this two week course on ecotourism planning. 21 Assistant Conservators of Forest (ACF) attended the course, taught by a tourism expert from the Wildlife Institute of India. [Md. Tarek Murshed]

The objective was that an eco-guide could use interactive methods to reveal information and messages about biodiversity and/or cultural heritage of the PAs and neighboring attractions to tourists. In addition, these guides would take part in the process of monitoring select bird species as indicators of forest health. The training in Srimongal in April 2005 is believed to be the first such training course in eco-tourism held in Bangladesh.

By August 2006, the Nishorgo Support Project had trained 74 eco-guides in four batches, of which 43 remained active. The active eco-guides went through an assessment by national level professionals where nine secured green cards (distinction), 31 blue (pass), and three failed. Amongst the nine green card holders, six came from Lawachara National Park. Visitor numbers there have increased rapidly and the eco-guides are now able to earn a good income based on their training and status.

Eco-Cottage Management Training with the Radisson Hotel

The owners and managers of seven eco-cottages received training and help in business development by trainers from the five-star Radisson Water Garden Hotel of Dhaka. In this week-long hands-on training, they learned about room preparation, reservation tracking, hygiene, food preparation and service, toilet/shower cleanliness, and many other aspects of hotel management. The training was able to show the owners and managers of the cottages how to deal with visitors.

Capacity Development in Governance for Collaborative Management Organization (CMO) Members

As noted in chapter 6, there were considerable challenges in developing good governance and support for participation by the poor in the new institutional arrangements of CMOs. A two-day workshop held separately in the northern and southern regions helped the CMOs in formulating plans and setting short- and long-term goals. Before formulating their goals and plans, the CMO

members reviewed their constitutions, the aims and activities of the Nishorgo approach, their past activities, participatory monitoring processes, and financial management.

A planning tool was developed by the Nishorgo team to simplify the planning process. Known as "SOAR" (Stakeholders, Output, Activities, Resources), the tool provided a framework with which participating field teams would focus their planning on the fundamental steps of identifying critical stakeholder groups, fixing expected one year expected changes (outputs), identifying necessary programmatic activities, and determining the resources required (DeCosse et al. 2005). This tool, however, was targeted to the Project field teams and not to the CMO themselves. However, it was found that effective capacity development only occurred when CMOs were actually doing their own planning, such as at meetings for preparing "Annual Development Plan" (ADP), at which time each CMO would review FD plans for their PA. At such meetings, the CMO members were far more engaged and the learning environment was more effective.

Skills Development for Alternative Income Generation

Training courses were conducted for local poor people to develop new enterprise skills. Among the topics covered were tree nursery development; bamboo propagation and management; bamboo and cane product making; weaving; nature tour guiding for rickshaw pullers; improved stove making; and cattle, pig, fish, and poultry rearing. These training courses were to improve the income earning potential of the participants.

Co-Management Training Course for Protected Area Field Staff

Efforts began in 2005 to build the capacity of field-level FD staff to take part in collaborative management. Three-day training courses were conducted in batches in 2005 for a total of 50 Range Officers, Deputy Range Officers, and Beat Officers, while two-day courses for 63 Forest Guards in four batches continued through 2006. The courses allowed for frank discussion between FD staff and their superiors, who typically led the training courses, about the role of people in the process of PA management.

A trainer demonstrates use of simple techniques for measuring basal area – and thus standing wood volume – within the Lawachara National Park. [Philip J. DeCosse]

Identification and Selection of Trainees

These and other training courses for Forest Department field staff (Range Officers, Beat Officers, and Forest Guards) were less effective than they might have been, principally because those staff members who attended courses were too often not the same staff members directly engaged in co-management at the pilot sites. At the heart of the problem was the process for selecting trainees for courses within the FD. The standard procedure is for the Divisional Forest

Officers (DFO) to identify and propose candidates from across their full Division. Training opportunities are a sought-after opportunity for FD staff, and the opportunity to name trainees is consequently an important power or authority of the DFO. Normal operating procedures do not permit a Conservator of Forests (senior to the DFO) or even a Project Director to strictly require the DFO to name certain individuals for training courses. Without this direction, the DFOs in many cases selected staff for training on co-management that did not work in pilot PA sites. Even when staff from pilot sites were included, it often happened that they were transferred to other locations soon after training was completed. It would have been more effective to have a database of all those potential staff trainees at pilot sites from which the DFO could have selected appropriate staff for training. Had training support gone to staff who then worked throughout the Nishorgo effort in PAs, the quality of work supporting co-management might have been higher.

Lessons Learned

It is evident that the recommendations of Mitchell et el. (2004) are still appropriate for capacity building of the FD and local stakeholders. Based on experience a number of lessons can be drawn.

Changing the mindset of the FD field staff is not enough -- they also require technical capacity in conservation management: The Nishorgo Support Project provided co-management orientation to the field staff but expected that they would already be capable of developing the technical aspects of PA management plans. This was not the case. Providing an "Operations Management Course for PA Co-Management" would be one step toward producing better results. Before that, new internal job descriptions for field staff need to be issued that specify detailed roles and responsibilities associated with PA co-management, including: the wider landscape, community management, CMOs, community-patrolling groups, alternative livelihoods, conflict management, and conservation.

Organize Joint Training on Co-Management to Include CMO Members Together with Assistant Conservators of Forests and Divisional Forest Officers: There is a risk that FD staff will prepare or implement PA management plans without involving CMOs or disregard plans developed by CMOs. Experience from training on nature tourism planning indicates that the key officials as well as CMO members should participate in the process.

Provide Nature Tourism Training to All Concerned Forest Department Officials: As nature tourism will increasingly be a major issue in PAs, FD staff, particularly ACFs and DFOs, need to have a good understanding of it if they are to work effectively with CMOs in developing site-specific plans. In addition, other lower grade FD field staff (from Range Officers downwards) need training so that they can understand and effectively implement these plans.

"Seeing is Believing" – Exposure Visits Show the Way: The cross-border exposure visits to co-management sites within West Bengal state in India contributed a high value compared to their low costs. Participants had the opportunity not just to observe the ways in which the West Bengal Forest Department and communities approached community-based conservation, but also had the chance to work as a group to develop approaches that might be tried in Bangladesh.

Junior and Mid-Level Officials of Forest Department should take an in-country Diploma Course on Co-Management of Protected Areas for Biodiversity Conservation: A diploma course should be developed by involving universities and experts based on experiences from the Nishorgo effort and other similar experiences. The course, which could be offered for staff below the level of DFO, would create appropriate knowledge, skills, and behaviors among officers for collaboration with local stakeholders rather than traditional top-down production-oriented forestry. Such a course would help in three ways: 1) It would be cost-effective compared with overseas training, not least because it could be easily replicated for multiple batches; 2) Domestic universities would be enriched and faculties would be properly utilized; and 3) With some training of trainers, diploma graduates would be able train other colleagues.

The existing "Forest Academy" should be made fully operational to support the capacity building needs of the Department: During the nature tourism training for ACFs – conducted at the Forest Academy in Chittagong – FD participants and resource persons found that the physical and support services of the Academy were of poor standard. If similar courses are to be organized, the training center would need upgrading. With enough courses operating this would generate funds to maintain a suitable standard. The Academy would also be enriched by collaboration with

Young men and women from areas neighboring the PA took part in Eco-Guide training courses, led by wildlife experts from leading universities. [Nishorgo Support Project]

local universities and regional/global academic and training institutions.

Set up a training database for all levels of FD staff: It would be helpful for the Department as a whole and the DFOs in particular (since the DFOs typically select trainees within the Divisions) if a training database were maintained. In addition to including those who have alredy received trianing, the database should also include those who, due to their position, should receive training. Local level training information should not only be held at divisional level but also consolidated at head office level. The information would assist managers to adopt modern and systematic human resource development approaches.

Skill Development for Grant Proposal Preparation within Co-management Organization (CMO) members can be Led by the CMO Members Themselves: The CMOs were developed and implemented small projects using Landscape Development Grants. And, while CMOs received orientation and training in how to write these and other grant proposals, some CMO members complained at times that the proposed grant activities were too heavily influenced by project staff. Evidence from implementation of the LDF process demonstrates that CMO members have sufficient capacity at different sites to develop their own proposals. CMO members may be targeted and financed to act as trainers for other CMOs.

Conclusion

Among the opportunities identified in the Mitchell et el. (2004) report, one of those that stood out was "the FD's willingness to change its approach and priorities towards greater environmental protection, including strengthening PA and biodiversity management throughout the country." With this willingness, the Forest Department can be expected to learn from the Nishorgo experiment

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20
Applied Research and Knowledge Management

Sadia Haque, Shimona A. Quazi and Paul M. Thompson

While the Nishorgo Support Project (NSP) design did not place a high emphasis on research, it was recognized that collaborative co-management of Protected Areas (PAs) needs to be informed by past research. In addition, gaps in knowledge should be addressed to understand the existing status and use of forest PAs as well as to improve practical conservation of forest habitats and wildlife, restoration of these ecosystems, and participation of local communities and stakeholders. In Bangladesh and elsewhere, there is often a tendency to support research without being fully informed of past studies, thereby replicating research and re-learning lessons. Limited resources and skilled researcher time could better be used building on existing knowledge. Therefore, rather than only commissioning new research, Nishorgo focused considerable effort at a higher level on compiling existing data and past studies and making these resources available to researchers and practitioners, and providing guidance on appropriate research methods and means of collaborating with the Forest Department (FD). At the same time, Nishorgo sought to bridge the gap between the FD and researchers, and to encourage and build the capacity of department staff and junior researchers to undertake good quality and relevant research on PA forests and their use.

Starting Assumptions and Subsequent Adaptations

It was assumed that the Forest Department was rich in past and current information on the forests under its jurisdiction, including conservation and wildlife in PAs, but that this information was not accessible to most of those interested in doing research on PAs. After discussion of these issues, the Forest Department, with the assistance of NSP, was willing to make it easier for researchers to access information and to encourage them to focus their research on the PA network. Nishorgo facilitated access to the relevant wealth of information through digital compilation and formulation of a research guideline. In practice, it was found that much of the relevant local information was not held centrally or did not exist in written form, let alone digital form; hence, institutional history and information held in the memories of senior/older staff had to be recorded.

To begin the task of collecting and compiling existing information, NSP hired an intern on a three-month contract in September 2006. Several FD experts were contacted and asked to provide rare articles, photographs or their own personal experiences working with the Forest Department. Initially it was assumed most relevant information would be available in the FD and NSP libraries; however, with time the search for information extended to other organizations such as IUCN, and an effort was also made to collect the outputs of relevant studies and experience from other South Asian countries.

Rare articles were collected and scanned for documentation. Some key books were scanned and digitized with permission. To make the information widely available, permanent, and easily searchable, it was decided to compile all existing relevant information onto a CD. Over

time, adaptations were made in the look and content of the CD. The design did not include high resolution maps or photographs. Maps are a vital resource that are not otherwise easily accessible through FD, given the limited time its staff has to answer outside queries, and older archival maps run the risk of gradual decay and are difficult to find. The final CD incorporated improvements in the look and content of the CD to address some issues, but did not include maps, which will require a separate effort to capture digitally.

The compilations were subsequently expanded by a second intern in 2008 to cover in detail the Sundarban forests. Ultimately, a wide range of journal articles, think pieces, "grey literature" of project reports, as well as web-based reports were included in the digital compilations. Two CDs were produced: "Applied Research Support Tool for Nishorgo Pilot Sites" and "Sundarban Digital Research Reference." The articles are sorted according to subjects, areas covered, national and international information, etc.

To promote use of this resource and publicize the scope for applied research in PAs, a day-long seminar on applied research and its feasibility in the five pilot Pas was held. Distinguished experts and university professors, along with interested researchers, discussed the new and improved research guidelines and where to go for help. To encourage use of these resources and research in PAs, 300 CDs were distributed along with the research guidelines, to interested individuals to encourage them to participate in PA research. Some 1,200 CDs of the Applied Research Tool Kit were circulated at the regional IUCN conference held in Nepal in 2007 for wider dissemination.

Linked with providing easily accessible reference materials, Nishorgo worked to improve the quality of research related to PAs and to coordinate this with Forest Department. A set of guidelines for research in forest PAs was developed and endorsed by FD as a necessary step in the systematic process of facilitating quality research both by outsiders and FD staff in PAs. This was then put into operation through a program of small grants and capacity building for research in PAs.

In 2006 the East-West Center (in Honolulu, Hawaii), the Nishorgo Support Project, and the Forest Department provided eight research fellowships aimed at final year undergraduates, Master's students, and junior-level faculty in various Bangladeshi universities, as well as to Assistant Conservators of Forests (ACFs) in the FD, to conduct six months of field research in the five pilot PAs. The grants were made through the FD and NSP; the East-West Center provided technical support to the researchers and ran workshops on proposal writing and academic article-writing for applicants and grantees. Through these small research grants the Nishorgo effort sought to explore the impacts and implications of protected areas on the livelihoods of people living in and around the chosen protected areas. This was essentially a research training exercise with a focus on the types of benefits that local people derive from the PAs. Writing workshops were held to help researchers analyze their findings and formulate research reports. Subsequently, a second round of 11 coordinated small research projects were supported in the same way, this time focusing on the workings and performance of co-management in the pilot PAs and with grants made to both ACFs and university researchers. Ultimately, two edited books (Fox et al., 2007; 2008), with chapters written by the researchers and ACFs assisted through this program, were published through Nishorgo Support Project.

A key aspect of this process was soliciting competitive proposals, which were reviewed and ranked by a selection committee. For the second round, limiting the competition to ACFs only, and even allowing some grants without competition, was considered; ultimately, the same open competitive process involving universities and FD was followed as in the first round to ensure transparency and a level playing field, and with the aim of ensuring that grants went to the best proposals and applicants. Some applicants dropped out in the early stages in both rounds. In each case, they were replaced by the writers of the next best preliminary proposal. Some of these researchers required relatively more help from the research support team, raising a question of how best to allocate capacity building resources between research grant recipients of varying experience and capability.

Lessons Learned

Forest Department needs to become more accessible to students and researchers. Some important changes took place through this initiative – the FD has guidelines and easily accessible information, and is more ready to disseminate information and willing to help researchers. The guidelines also make clear that the onus is on researchers to share information generated with FD for the better management of PAs. Prior to the project there was no system for collecting information about the PAs. Individual researchers worked and left without adding value to the FD database. Now more students are interested in working in PAs and background information is easily available for interested researchers and students.

Forest Department needs to conduct research and staff who have an interest in conducting applied useful research need nurturing. Previously, the benefits of and need for applied research had not been well recognized in FD. This program has encouraged interest in research and has, in particular, enabled some well motivated and interested ACFs to conduct research on questions of concern to themselves and FD. This has been valuable for the research and also as a training and capacity developing exercise. All the involved ACFs were extremely motivated to do a good job, even while seeing to their other responsibilities in the FD, and the program helped to develop their research capacities.

A coordinated small research grants and capacity building program can help build a new generation of active researchers. About a quarter of the participants (six) in the small research grants program went on to obtain advanced degrees, and five of them got places at overseas universities. In addition, one person went on to a teaching job at Chittagong University. Although there may not be a direct link between their Nishorgo research projects and their subsequent studies, the skills, connections, and motivation gained through the Nishorgo research experience were certainly helpful.

Archives and libraries need to be better maintained. While digitization of documents is vital to ensure wider access, there is still a need for preserving historic documents and papers, the future value of which may presently be unrecognized. While working to make the compilations and CDs, the collection of rare and older articles continually reappeared as a key constraint. The articles were in such bad condition that very old and hardly visible papers had to be scanned for documentation. So far older maps have not all been digitized and there is scope to make spatial information on PAs available through CDs. Ultimately this approach needs to be incorporated within the FD – for example the FD library lacks a systematic filing

system and a trained librarian. Similarly, the FD website – and its Nishorgo pages – should become the focus for updated digital information access, supported either by FD staff or a service contract made by FD, rather than project websites.

A more systematic approach to updating and expanding the compilations is needed. Much was achieved using interns and students, but the relatively narrow scope of their work left gaps (for example, out of one workshop proceeding, volume papers relevant to the Sundarban might be scanned but not papers relevant to other forest PAs). Similarly many other relevant papers and reports exist that were not obtained digitally or scanned into the compilation, while improvements could be made in the indexing and search ability of the CDs. A long-term strategy and modest budget is necessary to create a comprehensive digital information system, which will not only benefit interested researchers but also allow people of all levels to access information on Bangladesh's heritage of biodiversity, uses and management issues, and experiences in Protected Areas. These pilot activities have contributed to the FD's compliance with the National Biodiversity Strategy Action Plan, which seeks to link up information and institutional archives online, but this needs to be mainstreamed within the FD and linked with other related departments and organizations.

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Architectural Design and Infrastructure

Philip J. DeCosse and Makhlukur Rahman

Within the Nishorgo Support Project, Taka 646.972 Lakh (USD 1.1 million) was allocated for construction within the five pilot sites. Construction activities were to include complete buildings and other infrastructure. Facilities planned for construction included: five visitor interpretation centers; five student dormitories; five Protected Area (PA) offices and Assistant Conservator of Forests residences; four staff quarters; six staff dormitories/barracks; and a variety of trail improvements, parking areas, small bridges, and toilets.

These activities were designed to improve the ability of the Forest Department to deliver services in the PA and also to enhance visitor experiences. By mid-2008, the final of three rounds of construction contracting was underway, each round was linked to the Government fiscal year.

Starting Assumptions and Subsequent Adaptations

Neither the USAID nor Forest Department (FD) Nishorgo Project documents included an emphasis on or special attention to architectural design. While construction was to take place, the assumption was that it would follow standard procedures used within the Forest Department. The Nishorgo Team recognized soon after startup, however, that an enhanced emphasis on architecture might be a way of contributing to the following objectives:

- Heightening the awareness of history and pride within the Department;
- Emphasizing the concept of preservation not only of nature (as in the conservation activities of the Nishorgo initiative, but also of man-made elements in the PA landscape;
- Attempting to use natural materials in design and construction as a way of complementing the broader environmental focus of the Nishorgo effort;
- Providing facilities better suited to visitor needs.

Accordingly, a number of adaptations were made to the way the overall construction process was managed.

Contracting Process and Construction Oversight

In the Government of Bangladesh Development Project Proforma (DPP), construction targets were set by the FD following standard Government Public Works Department (PWD) design standards and associated cost levels. Normally within the Government, a consulting company is selected for the design and costing work, and then these costs are used as a guide in the bidding process whereby contractors are selected by tender. The process is managed and implemented by the Divisional Forest Officer (DFO), who releases tenders and selects both the contractor to implement and the monitoring consultant to oversee and check on construction work.

Under the Nishorgo experiment, the first deviation concerned design. The FD and Technical Assistance (TA) Team recognized that a number of key changes could be made to the normal process. First, the TA Team would support the design work, thus allowing for design approaches that might be different and perhaps more refined that the designs conducted under typical FD contracts. Second, at the request of the FD, the monitoring consultant would be provided by the TA Team, and not from direct Government funding. This was done because in past collusion between monitoring consultants and engineering contractors has been a regular feature of Government contracting. Finally, the monitoring consultant would report directly to the Project Director and Chief of Party, as a check on the work being implemented under the DFO.

Architectural Design: Forest Department Buildings and Student Dormitories

It was agreed that the TA Team would prepare new design concepts for large scale construction works (buildings) through a dialogue with senior staff of the FD on what such buildings should look like. During one of these planning sessions, four senior FD staff traveled with the TA Team architect to the Moulavibazar area and, on the way, passed an old tea bungalow style building. The then-Chief Conservator of Forests stated that this was the type of building and "look" that he would hope to see within the Protected Area system. Other senior members of the FD echoed his request.

The Moulavibazar Tea Bungalow, a source of inspiration for the subsequent "look" of the Forest Department's buildings in the PAs.
[Abu Syed Samiul Islam]

Accordingly, the TA Team architect designed a series of buildings that would echo this architectural and historical context. The general "look" called for sloping roofs (even on permanent structures), rough exposed brick, covered entries and wrap-around porches: all accents associated with the historic bungalow look. The first round of construction using this new design was widely vetted within the Department and approved for the first and subsequent years of construction.

Over the subsequent two years of completed construction works, a number of important issues arose relating the design process. Generally, many DFOs and their selected engineering firms have not accepted the design proposals of the architects. In fact, they have tried to replace the rough exterior brick with pointing and painting of the bricks, changing the overall concept and execution. Generally, while the senior staff of the Department recognized the value of

architectural innovation, many field level staff (including both DFOs and Range Officers in particular), have neither understood nor supported the new look. While it has nevertheless been executed on the ground (see photos in color section), it has only been done so after constant monitoring and modifications. Generally, the whole concept of thematic architecture based on historical looks associated with either the Department or the rural areas in which it works have not been supported by staff below senior level. Indeed, judging from the architectural approaches used in new construction in many areas of the country, and at most Government facilities, architectural innovation is not yet an accepted part of the construction process.

Architectural Design: Visitor Interpretation Centers

Design work for the proposed Visitor Interpretation Centers proceeded in a different fashion from that of the other buildings. Recognizing the even greater importance of these centers for the overall image and impression of the Nishorgo approach (compared to other FD buildings), the TA Team proposed conducting a national architectural competition among the leading architects of the country. Accordingly, a well publicized competition was organized in association with the Institute of Architects of Bangladesh, and financed by three leading companies from the construction sector (for more information on this competition see Chapter 24 on public-private partnerships).

Getting senior Government staff to accept that external expertise might be helpful in designing Visitor Interpretation Centers was not easy. One Secretary (highest civil servant in a ministry) blithely stated after being briefed about the Project's architectural work that "we have no need for architects – give me a few hours and I can design a Visitor Center for you in the shape of a banyan tree – everyone will love it." Generally, within the Government, there is only begrudging respect given to the expertise of architects in general, and a persistent confidence that the Government officials themselves have sufficient architectural and engineering know-how to do the work themselves.
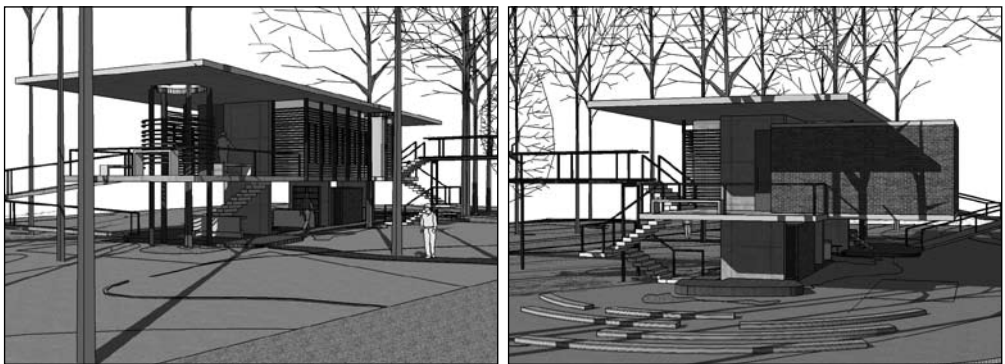
Computer generated view of Visitor Interpretation Center designed by Vitti Sthapathi Brindo Ltd. that won the national architectural competition organized by Nishorgo Support Project in association with the Institute of Architects of Bangladesh

With the winning design by Vitti Sthapathi Brindo Ltd. selected for the Lawachara National Park site, the FD recognized that it could adapt this building concept for use at other sites where Centers were to be built. Although due to constraints of PWD costing the buildings would need

to be smaller, the adaptations could nevertheless be executed. Today, the adapted Centers have been constructed at Mochoni within Teknaf Wildlife Sanctuary and at Satchuri National Park, while construction is beginning for Centers at Chunati but constructing of the full original design at Lawachara National Park awaits sufficient sponsorship from the private sector.

Monitoring Construction

The process of monitoring construction activities financed under the Nishorgo effort has evolved for the better over time, but not without some important modifications. Initially, the TA Team monitoring consultant visited field construction sites and reported on lapses or observations to the TA Chief of Party, who then forwarded these to the FD Project Director (PD). Not surprising, by the time a lapse was reported to the field level of the FD, construction deviations required greater cost to rectify, and thus were more problematic. Subsequently, the monitoring consultants began to send observations directly to the DFO upon having observed them, and only later to the PD and TA Chief of Party.

Other serious issues arose in the construction process, together suggesting serious lapses in the way the construction process is handled at the DFO and Range Officer levels of the FD. These issues include the following:

▪ Contractors bidding on construction projects place bids which are within only tiny deviations from the ceiling estimates in the design documents. It appears extremely likely in some or many cases that field FD staff share cost estimates with bidding contractors.

▪ In a number of cases, field FD staff (and particularly Range Officers) in effect become construction contractors themselves. They appear to inform the bidding consultants (either before or after the bidding process) that they will oversee the work themselves, and after a side deal with the winning contractor the staff actually implement the works. This happened in the case of the Student Dormitory at Teknaf GR and also for the Staff Quarters of Mochoni. In both cases, the Range Officer (who was to have been ensuring quality construction) thus became both judge and jury for the construction work. Not surprising, the construction at these two buildings was not of the standard of places executed elsewhere.

▪ Dramatic price increases (for example, in steel rods) have made it extremely difficult for contractors to complete works as designed. Because price estimates are fixed in Taka by the Government in the Development Project Proforma in year one of a project and not adjusted subsequently, unforeseen sharp increases in costs forced contractors (especially in the 2007/2008 season) to either cut costs and quality elsewhere in the buildings or halt work and complain to the FD.

▪ It is so commonly assumed that deviations will be allowed in construction, that it has required enormous effort to reiterate the necessity of strictly adhering to building requirements set by the architects. This gulf in understanding applies as much to the DFOs and Range Officers as it does to the construction contractors. On repeated occasions, DFOs and Range Officers would defend the deviations that contractors had made, assuming it was "okay" to do so. All have gradually learned through trial and error, but this basic view of contracting by FD staff and local contractors has been difficult to change.

▪ On too many occasions, there was only one bidder or two bidders for construction projects.

DFOs generally tender their projects only at Divisional level. This lack of sufficient competing bidders suggests that the FD has not opened up the bidding process sufficiently to attract a wide range of bidders.

Architectural Restoration

In addition to the new construction funded under the Nishorgo initiative, a number of efforts were undertaken to restore old buildings. This was done in the same general spirit of highlighting the long and proud history of the Forest Department in these areas, and the complementary idea that forest conservation can be consistent with conservation and restoration of man-made facilities. Accordingly, a number of pilot efforts were undertaken to restore existing structures, especially the following: the 1928 Beat Officer's quarters in the center of Lawachara National Park; the 1934 Teknaf Rest House; and the decayed and decrepit toilets and sitting area at Satchuri National Park. The first two buildings were restored as much as possible adhering to the same architectural elements as had been there previously, including use of bamboo where appropriate, protection or restoration of wooden windows and similar measures. The Satchuri rest area was refurbished as a visitor arrival point and kiosk for selling tourist items, in addition to providing a toilet for visitors. In all three cases, the restored buildings were destined for use by the Co-Management Organizations to enhance livelihoods and improve management within the PA.

The Co-Management Organization office at the Lawachara National Park looks like a newly constructed building in comparison to its previous condition where it had broken windows, discolored walls and dirt all around. [Abu Syed Samiul Islam]

Small-scale Construction Guidelines

For the wide range of small-scale infrastructure to be built under Nishorgo, it was assumed initially that all this would be designed, contracted and then overseen by the relevant DFO. However, after a few very inappropriate proposals were made by one or two DFOs in the first year (e.g., for an ornate Venetian concrete walking bridge over a creek in Lawachara NP; a huge ornate concrete entry way to Satchuri NP, and large concrete arrows to show directions in the forests), the Project Director and TA Team discussed how to introduce standards and guidelines into small-scale infrastructure works based on experience elsewhere (Gouvernement du Quèbec 1984) and other guidelines that had been prepared for Bangladesh but never used (Forestry Sector Project 2001). It became increasingly clear that just as DFOs

and Range Officers were not familiar with architectural concepts, so they were not familiar with appropriate infrastructure to support sound nature tourism.

Accordingly, the Project worked with a leading architectural firm to develop a comprehensive package of guidelines for all small-scale construction activities that might be undertaken in the PAs. These Guidelines (Vitti Sthapati Brindo Ltd 2007) include 30 different items ranging from picnic tables to signboards, toilets and more. After the Guidelines that had been thoroughly vetted by senior FD staff, the PD directed that all small scale construction activities should follow the Guidelines.

The old bridge which was built without following proper guidelines was unstable and dangerous for visitors.
[Quamrul Ahsan]

Following the Vitti guidelines, the newly constructed bridge proved to be more stable and safer.
[Md. Modinul Ahsan]

In the event, adherence to this order was not as complete as it might have been. In spite of having a well-conceived set of guidelines, it appears that many DFOs were of the deep opinion that their ideas about tourist interventions were better conceived than those of the Guidelines. So achieving adherence to sound small scale construction guidelines remains a challenge even at the end of the Nishorgo effort.

Lessons Learned

FD staff and visitors have appreciated the emphasis on architectural design and construction improvements, and especially the idea of harkening back to images and "looks" of the past, including restoration. The look of the Visitor Interpretation Center adaptation at Mochoni (the same basic look is scheduled for Lawachara NP) has been favorably received. It is generally agreed that the quality of construction has been enhanced by the approaches followed under Nishorgo.

However, a number of broad lessons can be drawn from the construction process as it has unfolded.

Accountability and ownership by Forest Department DFOs and Range Officers need to be improved. Historically, DFOs have near total authority within the FD over the construction process as it is executed following standard Government processes. Range Officers are the responsible "Disbursing Officers", and so have considerable influence within their ranges,

including over such construction works. In general, however, these officers are not – in the current environment of the Department – sufficiently accountable for their actions. If the local FD staff are not accountable, then no matter how many "consultant monitoring engineers" are hired, the process will never work. Too often, the DFOs and Range Officers acted as though problems in construction were the problems of others (other staff; the monitoring engineers; project staff; the Co-Management Organizations, etc.). Steps need to be taken to fundamentally change this accountability problem, without which the very process of FD construction under local currency is unlikely to significantly improve.

The construction process would benefit from greater transparency, particularly concerning the Co-Management Organizations (CMOs). Construction works are managed almost entirely internally to the Forest Department, from design through bidding through implementation. Although the major construction works were included in general terms in the Annual Development Plans (ADP) prepared by the CMOs for the Protected Areas, details were vague concerning the construction works. From local FD staff perspective, the CMOs are perceived to have little role in the construction activity. It would be beneficial for the CMOs to understand earlier in the process what construction is being planned and where. Such transparency would be of assistance both in improving the quality of construction and in reducing fraud.

Government construction budgeting rules and time delays severely constrain the construction process. Under standard management of a Government project such as Nishorgo, budgets and specifications for construction are included in an approved Development Project Proforma (DPP) document and then do not change until or unless the DPP is revised. This absolute fixing of construction budgets makes it extremely difficult to execute planned works when prices rise. In Bangladesh in 2008, this has been exactly the case. Although Nishorgo's DPP was revised and approved in late 2007, the iron rod prices increased by so much in a few months that contractors in some cases refused to bid. Because of the onerous punishments that may be meted out to PDs for any deviation from project design, there is an enormous reluctance to start executing if there will be any budget shortfalls later. The DPP, in fact, fixes prices and design elements for virtually everything to be constructed before a project is under way. Construction needs are typically set by FD staff in the absence of a clear site development plan or landscape plan. When the construction needs are only for FD staff quarters or offices, this ad hoc approach may be acceptable. But now as the FD is expected to provide carefully planned facilities to serve the many thousands of visitors going to the PAs, this approach is no longer appropriate. Inflexibility in DPP revision and the lack of an adaptive management processes makes any deviation personally risky to the PD.

The design and construction process requires greater centralized control if it is to meet the standards required for Protected Areas. Historically, FD field officers have had to oversee a wide range of construction and contracting interventions throughout the country's forest areas. Generally these were remote forest areas where few members of the general public would ever visit. Now, when a DFO proposes a new construction within a PA, the only external review of that design is whatever time and effort can be allocated by a single person at the central Dhaka level: in this case the Project Director. With nearly USD 2 million (Taka 13.6 Crore) of construction being designed and executed across 22,000 hectares of five Nishorgo pilot Protected Areas, it was unreasonable to think that a single person could ensure quality control. While the PD may provide guidance and suggestions, the concept of what types of

infrastructure are needed, and the design of those interventions, emerges from the DFOs, not from a centralized palate of options or experts.

Institutional reorganization for Protected Area management at the Forest Department needs to include specific personnel and responsibility to oversee and control architectural and infrastructure planning, design and construction processes of all kinds. Liaising with expert architects as well as tourism sector and nature conservation expertise should be done at the central level in Dhaka, where the expertise exists, and not at Divisional level. Within the proposed Wildlife Wing, a Conservator of Forests level officer should play this role, so as to ensure seniority over all DFOs.

Central oversight and approval of PA infrastructure could be provided by a committee constituted by the Department. In view of the need for a range of expertise this committee should include, in addition to FD members, other experts (e.g., in wildlife, in interpretative facilities, and in environmental architecture). The experts might be asked to volunteer their time for this review process. In the case of tour operators, one can assume that they would be pleased with a role in infrastructure planning within the PA system, in light of their own benefits from high quality construction.

Training levels of FD field officers are not sufficient or appropriate for managing infrastructure design and construction associated with nature tourism. DFOs and Range Officers have only the most rudimentary orientation or training on the construction process. They receive virtually no training at all in the concepts of architectural design, and certainly not in environmentally-friendly architectural design or people-oriented design. These FD staff need to be trained in a consistent approach to appropriate construction interventions throughout the PA system. They need to be briefed in detail on the concept and execution of small-scale interventions such as trail placement and construction, signboard installation, provision of water facilities, site planning and related issues. In addition, they need a more consistent and thorough orientation on the people-focused issues relating to facilities and construction for nature tourism.

Co-Management Organizations can play an important role in both benefiting from and maintaining PA infrastructure. Construction came first under Nishorgo, just as in most Government projects, but maintenance is a critical constraint. The FD is unlikely to allocate scarce maintenance funds for visitor facilities. The most viable option is for the CMOs to operate visitor centers and student dormitories on the basis that the CMOs will have the right to earn an income from these facilities and the responsibility to maintain them from part of this income. Greater involvement of the CMOs in all aspects of visitor infrastructure and associated services will offer a direct incentive for CMOs based on the main legitimate use of PAs. At Nishorgo sites, the FD has constructed Visitor Centers and student dormitories, both established to serve the public as they visit the PAs. FD staff may be reluctant to invest limited maintenance resources for these public buildings when their own quarters or offices are in dire need of maintenance.

The operation of student dormitories, requiring as it does the collection of fees to offset maintenance costs, will be particularly problematic for Government. For this reason, the CMOs under Nishorgo have begun to discuss requesting the FD to transfer management and

maintenance of these two public facilities to the hands of the CMO itself. Services provided in both buildings can generate service delivery fees for the CMOs that both engage them in the PA and help in ways to maintain them.

A more optimal construction process would include direct oversight by a single body. Under Nishorgo, the PD of the Department's project allocated funds to DFOs, who tendered and managed construction contracts. Architectural design and construction monitoring were managed by the Technical Assistance team, with the Chief of Party reporting to the PD. In the end, this brought too many actors into the process, rendering the construction process significantly more complicated than it need have been. While the Nishorgo process did indeed lead to better quality construction, a well informed single management oversight process would have been more efficient. Had some of the key lessons noted above been incorporated (e.g., accountability, centralized quality control panel, capacity of the FD, etc.) then central line oversight by the PD would have been optimal.

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Lawachara National Park
[Sirajul Hossain]

Presenting Interpretive Information

Bitapi C. Sinha and Mahbub Alam

> "Interpretation is an educational activity which aims to reveal meanings and relationships through the use of original objects, by first hand experience and by illustrative media, rather than simply communicate factual information" (Tilden 1977, p 8).

With the increase in tourism in Bangladesh, including visits to natural sites, and expectation that Nishorgo would result in higher numbers of people traveling to Protected Areas (PA), it was important to create facilities which would inform visitors and help them enjoy their visits to PAs in responsible ways. Good interpretation helps visitors to explore and understand better the places they visit. It also adds depth to the tourist's experience, making the visit more worthwhile than just a trip to see the sights. Interpretation by local residents ensures that they directly benefit from tourism activities.

To promote eco-tourism several initiatives were undertaken by Nishorgo Support Project in the five pilot PAs. Accurate information and a variety of interpretive techniques were used with the aim of helping visitors gain knowledge of the natural and cultural resources of the country.

Only very basic signs such as this had been used previously at pilot PAs. Traditionally, all plantations are marked with a concrete sign, or more recently painting on metal has been used. All are made locally and implemented by the Range Officer or Assistant Conservator of Forests. The need was apparent for a consistent look and image for all signs, whether directional or interpretive. [Naved Mahbub]

Starting Assumptions and Subsequent Adaptation

Information signs

Historically, the PAs were not visited by tourists in any significant number. Accordingly, little attention was paid to the presentation of interpretive information within the PAs. Signs were presented basic management information about plantations or tree inventories within the forest. The design and execution of all signs and interpretive information was done directly by the relevant District Forest Officer (DFO).

As Nishorgo's communication efforts raised awareness about the pilot PAs, the number of visitors began to increase almost immediately. The largest portion of visitors came in group

It had been common to present information about the forest by nailing signs to trees, such as this one. As in this sign, indicating the area of Lawachara Beat, information was presented for internal management purposes rather than interpretive purposes. [Philip J. DeCosse]

outings, most often either as large family gatherings or school outings. Behaviors such as littering, cooking food, and playing loud music were common. The Project recognized a pressing need not only to present information about the forest and what visitors would find, but also about norms of appropriate behavior in the forest.

The initial focus of sign development was on raising the standard of information presentation to meet visitor needs. Initially all signs, even small and directional indicators, were proposed for completion by the project. It soon became clear that the central preparation of all signs would slow down the delivery of signs to the field. Accordingly, direction was given to local FD staff to prepare simple directional or informational signs, while leaving interpretive signboards and presentations to be prepared centrally. Preparation of interpretive signboards was done jointly by wildlife experts, the project staff and the Forest Department, with the project staff providing financing for graphical preparation, printing and signboard installation.

The optimal means for physical mounting of signboards was the subject of considerable planning discussions. Tradition within the Forest Department –and in most government departments –is to construct in steel-reinforced concrete, with lettering etched into the concrete. The other common means of presenting information, used more often by NGOs is on steel signs with painted messages. The Nishorgo team wanted to ensure a common high quality and standard across all sites, including a resolution that would allow presentation of more information than

The most common means of presenting information in the PA has been on steel-reinforced concrete mount, as in above. [Philip J. DeCosse]

possible on a painted signboard. The team also wanted to be able to update or replace existing interpretive information without needing to replace the entire signboard structure.

In addition, Nishorgo sites, generally in remote areas, raised the risk of theft of signboard materials (this explains why the FD has generally made its plantation signboards only in concrete). The solution used at Nishorgo sites (shown in photo on the next page) included painted metal poles, each set into concrete underground, with four painted heavy metal plates soldered into the poles (not screwed in, which would allow theft of the plates). Onto each of the plates the interpretive signs printed on vinyl with adhesive backing were stuck to the plates.

Generally, the technical means of presentation worked effectively, although two additional improvements were added later. First, although the outside of the poles were painted, it later appeared that rust in the humid forest environment appeared on the inside of the poles. Furthermore, in the initial model tourists could begin to peel back the vinyl from the plates since the corners were exposed. Later modifications placed a frame around the presentation board to reduce access to the corners of the vinyl.

The approach used at Nishorgo sites presumed a centralized capacity to create, update, reprint and replace the signboards. This was made more difficult for the FD as a result of its standard operating procedures and tradition, which is for all decisions about interpretive information, and the contracting and budgets required to install it, to be made at the Divisional level, under the budget managed by the Divisional Forest Officer. Although centralized preparation was piloted under Nishorgo, the budgeting and contracting for interpretive information remained at DFO level, making it difficult to ensure centralized quality control.

Through mid-2008, 78 interpretive and directional signs had been placed within the PAs and at trail heads, explaining the resources on site and the efforts undertaken by Nishorgo. Visitors could stand on all four sides to read them. The installed signs were similar in all the five pilot PAs with the same color scheme so that it would also act as a common identity to the activity. However, this has resulted in some signs covering species that are rare in a given PA, while a greater focus on notable and more easily observed species found in the respective PA would have been more relevant to visitors.

Administrative signs such as the "Do's and Don'ts" for a visit to the PA and a map of the a given trail have also been placed at the entry to trails.

As the project neared its end it became clear on the one hand that rigorous quality control standards needed to be maintained from the central level of the Forest Department (FD) to provide content for future signs, while on the other hand FD staff at the divisional and local levels must have the requisite training and orientation to develop and execute appropriate signs.

The Project installed signboards having on site information with a uniform color scheme. The signs acted as its trademark in all the five Protected Areas [Naved Mahbub]

Nature Trails

Assuming that visitors will have different amounts of time for their visits to PAs, and that most would not want all day hikes, three different types of trails of standard durations have been prepared in the five PAs. None of these trails were newly cut in the forest. Rather they were traced upon the already existing walking trails. They are divided into short (half hour), medium (one hour), and long (three hour) trails. The primary objective behind these trails was to offer "fun through adventure to visitors" instead of them just picnicking in the PAs. The

idea of including trails of these three lengths was to test the relative interest of visitors in the different lengths of hiking excursions. It has become clear that very few visitors walk the three hour trails. Those that do tend to travel in small groups (of less than eight). It has also become apparent that the half hour trails tend to become highly congested during peak visitor hours on weekends or holidays.

To support visitors in these trails, tour guides and trail specific brochures have been prepared as well. Visitors who prefer visiting PAs themselves can use trail brochures (available in both Bangla and English) which include illustrations of species likely to be encountered and detailed maps. Moreover, numbered waypoints were also installed along trails in the northern PAs where visitor numbers are higher, for the convenience of brochure users. However, these markers have suffered from damage by visitors.

Marked 1/2 hour, 1 hour and 3 hour nature trails were tested as attractions for nature tourists. [Philip J. DeCosse]

Eco Guides

Eco-guides mainly assist tourists in interpreting biodiversity along the trails. They have been trained to provide these services to visitors, including participation in a standardized five day training course covering such issues as key specie identification (especially birds), biodiversity context, the management plan, participatory management structures (including the CMO structure and purpose) and guidance for eco-guide behavior (see, for example, the suggestions for guides in the box below). Three categories (green, blue, and red) of guides are available according to their communication skills and talent. Mostly local youths who have at least secondary level education were selected as eco-guides. The aims were to improve quality of visitor experience, control inappropriate visitor behavior, and to help unemployed youths by creating an alternative source of income for them. Beside interpretation, visitors hire eco-guides for better tour management and

Top Twelve Suggestions for Nature Tour Guides

1. Allow/Enable the Experience of Peace in Nature—Nishorgo
2. Don't Talk too Much
3. Emphasize the Human-Relevant over Dry-Scientific Facts
4. Show your Love of Nature—It is Magnetic
5. Give a Brief Cultural Context
6. Give a Brief Natural and Historical Context
7. Use Appropriate and Non-Offensive Language
8. Treat Women with Respect for Social Norms
9. Give Advance Warning about Scary Things
10. Be Presentable
11. Bring the Right Stuff
12. Be Prepared to Ask for a Fee

security inside the forests. Highly skilled eco-guides are even hired for field research and study tours.

Interpretation Centers

Under the Nishorgo Support Project, Interpretation Centers have been set up in three PAs namely Satchari National Park, Teknaf Wildlife Sanctuary, and Chunati Wildlife Sanctuary. The Interpretation Centers were set up with the objective of creating awareness of biodiversity and PA issues amongst all visitors, whether from nearby areas or distant towns. These centers, which would ultimately be the hub of the PA interpretive program, were intended to prepare the visitors for an enhanced experience in the sites.

Information on the PAs was collected from different sources and converted into easily understandable text and illustrations to meet the interest level and reading ability of all types of visitors. Planning for each panel was carefully done in terms of selection of the text, pictures and its translation to Bangla. Each panel went through careful review both within Nishorgo Support Project as well as by the FD in order to avoid any factual and textual mistakes.

The first Center was established at the Mochoni Nature Center in Teknaf Wildlife Sanctuary just outside Teknaf town. It was inaugurated on July 9, 2008. This is a small Center that portrays the spirit of the place and presents information on the rich biodiversity of Teknaf Wildlife Sanctuary. It is also an effort to attract the very good number of tourists who pass the site on their way to visit St. Martin's Island. In order to make interpretation accessible to a diverse audience, the panels are bilingual (Bangla and English). There are interactive panels on bird calls that engage and attract visitors. The goal is to increase the practical understanding and experience of visitors by providing information gained through fun activities. The drawback of interpretive planning here was that an existing building at Teknaf had to be used, consequently this constrained the flow of visitors and the amount of information that could be displayed.

Satchari Interpretation Center invites visitors to experience the world of Hoolock Gibbons and the rich biodiversity of the Teak forest. It also depicts the life and culture of the Tripura community. The Chunati Interpretation Center focuses on Asian Elephants and the Garjan forest. It also gives the visitors a feel of the rich bird diversity found in and threats to Garjan forests in the country.

The construction of the Interpretation Center in Lawachara National Park has become complicated and delayed associated with the Government's hesitations to accept private donations to construct the Center under a public-private partnership. A lot of effort went into raising the funds for this center, including an elaborate competitive design process. Many countries are now banking on such initiatives both for conservation and development. In keeping with the high visitor numbers, the planned Lawachara Interpretation Center is larger and with a wider range of amenities than the other centers, which are a scaled down versions of this original design.

Publications

Four types of promotional publications were prepared for PAs: Site Leaflets, Annotated Trail Brochures, Site Information Brochures, and a summary booklet entitled "Protected Areas of Bangladesh: a Visitor's Guide". The initial approach was to develop a range of simple publications for each PA. With purchase of an entry ticket, the visitor was to receive a free Site Leaflet. Other brochures and booklets would be obtained for a fee paid to the CMO. The Annotated Trail Brochures were designed to coordinate with small discrete numbered way markers along the forest trails. For each of the three trails within a given PA, 10 observational points were marked along the trail and discussed in the Brochure. The Trail Brochures contain details of the trail routes and illustrations of species found along the way. The aim was to enhance visitors' experiences while they hike by making their visits educational through recreation. Site Information Brochures were prepared to provide in detail the history of the site, important species, culture and accommodation facilities, etc. They also portray different aspects of the culture and traditions of indigenous people who reside near the PA. This brochure was intended to attract visitors by showing them in detail on-site facilities. The Visitor Information Guide gives a basic idea about all the PAs of Bangladesh and contains brief information on the interesting features of each PA, so that people can learn about and can plan visits to the PAs of Bangladesh.

The quality, pricing, marketing and sale of these interpretive materials did not evolve into a sustainable model as rapidly as expected. Although the team felt that high quality paper and printing were necessary to project an attractive look to visitors and readers, the cost of executing this attractive look made brochures prohibitively expensive to the average PA visitor. Few visitors were prepared to pay even 20 Taka (US$ 0.29) to purchase brochures, and almost none other than foreigners and wealthier Bangladeshis purchased the 100 Taka (US$1.47) Visitor Information Guide. The need for very low cost interpretive material became apparent. It also became evident that visitors did not plan to make significant expenditure on their nature outings. This entire sales process—which was to have provided additional income for the CMOs—was further constrained by the government's unwillingness to explicitly allow the CMOs to generate revenue from PA related activities.

Souvenirs

Visitors to the PAs usually like to take home a memory of the site they visited. Souvenirs, therefore, not only have a take home value but also are an important tool for marketing. Therefore, certain souvenirs have been designed which are sold through shops set up in the PAs. For example, T-shirts with images of elephants, Hoolock Gibbons and a map of the PAs of Bangladesh were specially designed and are sold at the PA Information Centers. These souvenirs, like the interpretive information brochures, were to have generated revenue for the CMOs, but sales of these specialized products were low, principally due to price. Attention in the future needs to be paid more carefully to the full PA souvenir value chain, from product conception and development to delivery and sale at PA level, either via tourist product concession arrangement or via sale and management of the CMO.

Youth Outreach Materials

One element of Nishorgo's interpretation efforts included outreach to young people living around the Protected Areas and in Dhaka. To this end an interpretive package was developed including educational games (steps and ladders), animal masks, a set of animal stickers, bookmarks, and daily routine or schedule cards with key messages. These materials were used in Nishorgo Club activities as well as activities at schools.

Lessons Learned

Always prepare the interpretive plan with its themes before designing a building so that the center's requirement is known before construction. The design of the Nishorgo-constructed visitors' centers is conceptually very good but presents a number of functional problems as an interpretation center. Three shortcomings of the interpretation center in particular stand out and should be learned from in any future centers. First, the centers' glass windows succeed in bringing light into the building, but significantly reduce the wall space on which interpretative information can be displayed. Second, there is not a clear flow plan for visitors to the centers. At a number of points in walking through the building, visitors can choose multiple directions, thus making it more difficult to present interpretive information in a logical flow. Third, the moisture and humidity levels inside the buildings suggest that they were constructed so as to require air conditioning. In light of the distant locations and cost of electricity, it would have been better to construct a building that did not require air conditioning, and used natural air flow instead.
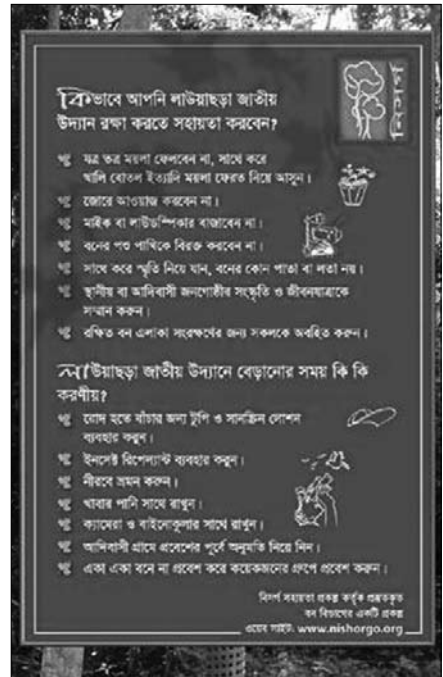
Bangla "Do's & Don'ts" for visiting tourists were considered essential as part of the need to educate visitors about behavior appropriate for a Protected Area. [Philip J. DeCosse]

Special architectural needs at interpretation centers in remote PAs. The Interpretation Centers as built at Mochoni-Teknaf and Chunati presented a number of important lessons. As the buildings are for public use, in the interests of hygiene in remote locations, water and sanitation amenities should be located at a suitable distance from the building. Per the initial design, however, toilets were built near the entrance area. After this was pointed out for the Mochoni site, toilets were not used in the building and new toilets were constructed some 25 meters away. This still needs to be done in the other sites. In addition, the wooden slats on the outside of the glass windows created an attractive lighting inside the building, but were difficult to clean without special equipment, and with dirt accumulating on the windows affected the visitor experience negatively. Moreover, in a country where deforestation is a major concern, use of wood in the Centers could have been minimized, although it is debatable which construction materials would be the least environmentally damaging.

The durability of interior and exterior signboards is a problem and will require regular maintenance for which FD lacks expertise. The layout for the signboards included inside the Interpretation Centers is produced on paper print with lamination, while outdoor signboards are printed on vinyl. With constant exposure to the elements, especially humidity and dirt, the paper printed signs will get weathered. The durability of the outdoor signboards can be extended by making small roofs above the signboards. This would not only protect the boards from exposure but would also shelter visitors reading the signs.

Policies need to be in place regarding sustainability in management of interpretation centers before initiating any venture involving profit sharing. The Forest Department needs to change the way it thinks about community involvement in the management of interpretative facilities. The visitor center infrastructure has been built but the modalities for how it is going to operated are not clear. The premise of setting up facilities was that they would be managed by the CMOs, and that the revenue generated would be shared between the FD and the CMOs. And yet, the modalities of managing the interpretive facilities were not in place in a detailed manner prior to construction of the Mochoni Center. CMO members were thus at a loss to understand how they would benefit from interpretive infrastructure and materials. The need for clearer agreements on benefit and cost sharing between FD and the CMO is equally important for the business of supplying and selling interpretive information brochures and souvenirs.

Interpretive materials were prepared in Bangla, and occasionally in English also. This panel was prepared for the Chunati Wildlife Sanctuary.

The Interpretation Center should be a first stop for all visitors. Efforts should be made to make the Interpretation Centers popular destinations not only amongst the local communities but also amongst outside visitors. The common way of doing this internationally is to make the Interpretation Center the first stop for visitors. In addition to paying entrance fees here, all the eco-guides should be stationed or available from the Center and should be allotted groups on a "first come first served" basis. The guides should first take visitors around the Interpretation Center to orient them and then take them on the trails. This would not only ensure better use of the Interpretation Center but also the visitors would understand the options for activities that they can choose from.

Complementary services should be provided at the Interpretation Centers. The Center should be open from sunrise to sunset so that all visitors can enjoy the facilities. A small food service provider can provide tea and snacks, owned and run by local providers under concession, or by the CMO directly, be sited near the Interpretation Center along with the souvenir shop selling local handicrafts, sales

items and publications. All the proceeds from the sale of products should go to the CMO. A certain percentage from the eco-guide's fees should also go to the CMO. No visitors should be allowed un-guided. Visitor numbers and their use of trails should be monitored.

Interpretation should be a continual self-sustaining program and not a one-off activity. All the components of interpretation are linked and need careful planning and dissemination. A large number of well designed publications, which are site specific, have been produced for visitors. But if the PAs lack Interpretation Centers or if these are not well known, then visitors will not be able to access or buy these publications. Publications have a shelf life, after which the information becomes obsolete and needs updating and a new edition should be printed. To sustain this and maximize use of information, low cost interpretive publications should be included in enhanced entry fees. The money thus generated should be managed by the CMO, which should be responsible for replenishing as needed the stock of publications.

The Nishorgo team together with the Forest Department invited the Arannayk Foundation to take over the updating and re-supply of interpretive information brochures to the pilot PAs. It was argued that the Foundation had the remit and expertise to undertake periodic updating and reprinting of such brochures and could supply them to the PA CMOs at cost as a public service, and in return the Arranayk Foundation name and logo would be added to the reproduced materials. While the Arannayk Foundation was not at the time interested, some suitable non-profit central organization needs to be involved to play this role otherwise renewal and reprinting of interpretive publications is unlikely to be sustained.

This need for centralized management of interpretation as a unified program has implications for signboards also. Developing interpretive content for signs should be the responsibility of qualified experts at the central level of the Forest Department, and should not be lightly delegated to DFOs or ACFs lacking explicit training in this specialized field. More generally, efforts need to be made to build the institutional capacity at the Forest Department to maintain and refine the interpretation process.

Trail maintenance and security of visitors are concerns. Stronger co-ordination and dialogue is needed among the CMOs, Community Patrol Groups and other local stakeholders to ensure that as part of their activities trails are maintained (without damage to the forest but ensuring safety of visitors) and that local people can benefit from this activity.

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Lawachara National Park
[Sirajul Hossain]

Communication Tools and Strategies

Mehrin A. Mahbub

The primary challenge of Nishorgo was to alter the way Protected Areas (PAs) were managed and governed at pilot sites. A communications program complemented these field experiments, and an initial communication strategy was developed by the project team in 2003. The purpose of this chapter is to review the main initiatives undertaken in the communications program and to identify lessons learned in the process.

Starting Assumptions and Subsequent Adaptation

Communication Strategy Development

The 2003 Nishorgo communications strategy identified and described priority stakeholder groups that would be targeted. Principal targets included government policy decision makers, journalists and media, youth – including university students, local stakeholders at pilot sites, environmentalists, and private sector leaders. The resources available to the Nishorgo team were not sufficient to conduct mass communication campaigns; besides, this more targeted approach was more acceptable to the Forest Department (FD) because of its hesitancy to draw attention to itself in mass communication activities.

The communication strategy focused on developing a unique identity for the Nishorgo Program. To provide a fresh "look" distinct from the Forest Department's existing image, a new name and logo were established. The challenge was to use the "new identity" to communicate the Department's willingness to make change.

The Nishorgo communication strategy elaborated a platform for reaching out to different stakeholders. The strategy identified possible target audiences and listed communication tools for reaching each of them. However, the communication strategy was very comprehensive and perhaps a little too ambitious for a five-year project. National level awareness generation calls for a broader resource pool.

The communications unit of Nishorgo consisted of a communications coordinator and a graphics designer, along with one communication officer in each of the northern and southern regions. Communications activities were initially expected to be modest but they gradually came to take on a larger role to address the need for consensus-building at local and national levels.

The Naming of Nishorgo and the Program-Project Distinction

The initial contractual name for what is now known as the Nishorgo Support Project (NSP) was the "Co-management of Tropical Forest Resources in Bangladesh Project." Knowing that the project itself would be gone after only five years, the project team decided instead

to build brand awareness and recognition of what would be a permanent FD program. This meant an image associated exclusively with the management of forest Protected Areas, wildlife conservation, and the benefits of conservation to the local poor and the nation at large that would be distinct and yet complementary to normal Forest Department operations. The Department's public reputation in 2003 was marked by allegations of staff improprieties and occasional collusion with political figures. The image was generally not a positive one, especially amongst the urban youth and private sector. It was felt that a fresh image associated with community participation and nature conservation – and especially with participation of the poor – would be an important modification of the traditional FD image.

The FD, USAID, and the project team agreed that the main beneficiary of the project would be the younger generation for whom natural resources need to be preserved. The first step in this process was to create a name and an image for the new program. To do so, a national naming competition was held among school and college children up to 18 years. Nearly 300 students from around the country submitted proposed names along with drawings, descriptions, or explanations as to why that name would be appropriate for a national forest conservation program. The naming process itself stirred considerable interest within the Department and transmitted a clear view of how our younger generation hopes to see Protected Areas conserved.

With the "Nishorgo" name (which means "serene (or idyllic) nature") established, a suitable logo was developed to present an image that was consistent with the Forest Department's wildlife conservation mandate and participation, with a more modern "look" than the FD logo. The new logo used green and red – the colors of the national flag. Red was also intended to connote the Red List of Threatened Species put out by the International Union for Conservation of Nature (IUCN). In addition to the name and logo, the project came up with a slogan. The slogan – originally in Bangla – can be translated as "Saving nature for future generations." This slogan later helped the team to forge partnerships with youth organizations.

Under the new branding arrangement, the permanent PA and FD conservation program was called the Nishorgo program and, in keeping with this, the five-year project supporting establishment of this program, became known as the Nishorgo Support Project (NSP).

The project team aimed to establish the name and image of the Nishorgo program as a conservation program within the Forest Department that would last after the project ended. It is as yet too early to know whether the Nishorgo program as such will remain an accepted element of the Forest Department, but it would be fair to say that many people continue to associate Nishorgo with a time-bound project, and not with a permanent program, as originally envisaged. It is, however, increasingly recognized that Nishorgo activities within the FD connote PA management and participation.

The Forest Department and Communication

It was assumed in the early years of the project that the FD would be active in developing and institutionalizing the Nishorgo image and also in furthering its ideas in the public domain, particularly through print and television media. However, it became quite clear that the

Department itself, including its communications officers, had limited freedom in advancing their ideas through mass media. Forest Department staff must get permission from the Ministry of Environment and Forests for all press releases or communication with the press. This need for approval on all communication actions constrained the ability of the Department to develop an improved public image.

The Annual Tree Fair (Brickho Mela)

Each year, for more than 20 years, the Forest Department has organized a national Tree Fair in Dhaka, with the Prime Minister usually attending as chief guest. The Tree Fairs have successfully disseminated information about trees and encouraged the public to plant trees – and have also enhanced the image of this service of the Forest Department.

When Nishorgo began, the Department asked it to play a part in the Tree Fair. For three years, the preparation of booths, brochures, and the organization of personnel for public outreach absorbed Nishorgo's communications resources during the months of May and June. With hindsight, the impact of those efforts was less than expected. This is because the people who visited the Nishorgo booth at the fair were not a priority communications stakeholder group – those who visit the Fair are generally the urban middle class looking to buy seedlings, saplings or flowers to plant in their homes or apartments. This shows how targeting communications effort through traditional FD activities or priorities can miss the key stakeholders for a new conservation-based program such as Nishorgo.

Site-level Communications and Outreach

Local level communication was a fundamental component of the overall strategy. In retrospect, northern and southern sites differed in the level of communication success. In the immediate buffer areas and vicinity of the PAs, stated awareness of the Nishorgo activities was high among adults (over 60%, according to surveys), with those surveyed stating they were aware that Nishorgo was associated with forest conservation. However, the awareness level did not necessary dictate action. To address this gap, a range of communication activities was organized. These included Nishorgo Clubs, school outreach events, community cultural events (theater, music, folklore), and work with local and regional journalists.

Traditional media, such as folk songs and stage drama, proved to be powerful in rural settings. In the northern region, RDRS, a Bangledeshi NGO, successfully developed local performer groups in each of the PA sites. Hundreds of people gather to watch the theaters and folk song shows, known as "jatra."

Existing RDRS theater teams from northwest Bangladesh were mobilized to train groups of local resource persons, who in turn imparted theater training to selected villagers residing in PA landscapes. Thousands of local villagers attended the theater events organized under the Project. Many songs describing forests, biodiversity, natural landscape, and wildlife were developed and performed in the dramas that were organized at strategic locations in and around the pilot PAs. These mass gatherings generated considerable community awareness about conservation.

At southern sites, a relatively greater emphasis was put on preparation of news articles for local newspapers; theater had to be abandoned as it became apparent that an evolving religious fundamentalism made these approaches less welcome. "*Pot gaan*", another local combination of song and message, was to have been used in the Chunati area but was abandoned when it became clear that it would not be well received by some religious leaders.

Theatrical events and troupes provide an important means of conveying messages. Here, a group trained by Nishorgo partner RDRS delivers a show on conservation near Satchari National Park. [Nishorgo Support Project]

Both the northern and southern site communication officers forged strong relationships with the local media resulting in regular publication of news about Nishorgo programs and activities in local newspapers. Moreover, much of Nishorgo coverage in the national dailies originated from local initiatives that brought PA stories to the attention of local correspondents (journalists).

A substantial part of the local communication effort focused on youth (see separate section). Other local communication activities typical of Bangladesh – such as observing international days, rallies, and competitions – also publicized the Nishorgo Program. NSP strived to involve the local Forest Department officers in these communication activities from the planning stage, but actual FD participation varied greatly between PAs depending on the interest of individuals.

Members of the Earth Club of North South University spotting the different bird species while hiking in Satchari National Park. [Muhammad Hussain]

Members of the Earth Club of North South University learning about Co-Management and sharing their views about forest conservation activities. [Muhammad Hussain]

National Level Events

The two most significant national level events undertaken were the launch of Nishorgo in early 2004 and a "Co-management Week" in 2006. The 2006 event was co-sponsored and organized with the MACH project and included local stakeholder events and visits as well as a

roundtable discussion with development partners and civil society leaders. It included invited international guests from Nepal, India, and Sri Lanka, all of whom are leading experts in the participatory management of protected areas. The Co-management Week events also brought together for the first time co-management participants from wetlands and forest PAs around the country.

Both of these events raised awareness among participants. At the same time, these events absorbed substantial time and effort of the project team. If any lessons can be drawn from such events it would be this: major events are only worth undertaking if follow-up media dissemination and policy influence processes can be supported. Without constant attention to the journalists and television media both during and after such events, the impact on awareness-raising is not significant. Moreover, in the case of the Co-management Week, the intended policy impact from bringing together forests and wetlands, including fisheries, to better understand the common potential for co-management was lost when it proved administratively impossible to bring senior officials from the respective ministries to a common platform.

Targeting Youth – The Scouts and Other Activities

Nishorgo's communications strategy included an explicit target of reaching out to youth, beginning with its youth-focused slogan. But how to reach out to the youth in a country of Bangladesh's population size? The project team singled out three youth focus groups.

In and around the PAs the team reached out to young people through the creation of Nishorgo Clubs and events for children (for example, art competitions and fairs) often conducted through schools. Local Nishorgo staff regularly held school programs, supported by youth-focused communication materials including stickers, games, bookmarks, masks, pencils, and other small items. Clubs provided an avenue for young people to become involved in the forest at all five PAs.

The Bangladesh Scouts were a second youth target. More than a million strong, the Scouts are organized in every district of the country. At the national level, their leadership includes some of the countries leading civil servants (Joint Secretary level and above), many of whom complete their day jobs at the Bangladesh Secretariat and then go directly to Scouts headquarters to volunteer their time. Unlike Boy Scouts in the United States, where membership levels are highest at elementary school age and then taper off steadily through high school, the majority of Scouts in Bangladesh are from the high school and university age groups. As nearly 20% of the Scouts are young women, the Scouts offered an excellent means to partner with a single organization and spread awareness of Nishorgo's conservation efforts while at the same time engaging youth in useful conservation activities.

Of the various activities conducted between Nishorgo and the Bangladesh Scouts, probably the most effective was the high profile "PA-to-PA Hike" designed to raise awareness of the existence of a PA network in the country. Led by one of the country's leading outdoor enthusiasts and ornithologists – Enam ul Haque – the first hike included a group of 60 Scouts and Rangers who spent 2 1/2 days hiking between three PAs in the northeast, followed by television and newsprint journalists. A similar hike was later conducted between Chunati Wildlife Sanctuary

and Teknaf Wildlife Sanctuary. These hikes were far more effective in capturing the interest and attention of both television and print media than were the other Nishorgo events. Subsequently, local scout groups arranged similar hikes in nearby PAs. The Nishorgo team also participated in numerous national jamborees (scout conventions) attended by thousands of Scouts. At these events, Nishorgo staff organized quiz programs, held seminars on making improved stoves, and showed nature-focused movies. The local youth mingled with the Scouts in many events – from PA-to-PA hikes to national Scout jamborees. All these activities helped to raise the level of recognition about NSP among the Scouts. This resulted in some potentially more lasting links between youth and PA management – for example, the Scouts from Moulavibazaar came forward to help with tourist management at Lawachara National Park.

The Minister of Environment and Forests and the US Ambassador, along with senior FD staff members, at the February 2004 launch of the Nishorgo Program.
[Asiatic MCL]

Probably the least effective of Nishorgo's youth targeted activities were those focused on urban youth. The team assumed that an outreach program targeted at the best schools in the capital Dhaka would influence those young people to be active supporters of conservation and thereby raise the awareness of their parents. The team organized communication events including games, a movie, and prizes at each of eight leading schools in the Dhaka area. However, it was necessary to involve outside experts on forest to keep the fledgling Earth Clubs interested – otherwise, they ended up learning very little. In general, seminars and in-house programs were not so effective. The program content or duration tended to result in participants losing interest. Limited resources for expensive field visits and the parents' fears for their children's safety on field visits to PAs meant that this program did not take off as planned.

Nevertheless, some visits organized for university students did succeed in informing a potentially influential section of society that there are PAs with interesting nature trails and rich biodiversity – even in Bangladesh. This practical experience usually improved their views about Bangladesh and is possibly the best thing that Nishorgo did at youth level to encourage visits to PAs.

Central Coordination Cell and Message Management

From its outset, Nishorgo tried to establish a central coordinating cell to guide communications activities. The program intended to include representatives of Ministry of Environment and Forests, environmental NGOs, and possibly the private sector. However, the Ministry was reluctant to take a leadership role in coordinating media-related activities, so coordination of communications messages was undertaken by project and FD staff. In essence, it was not possible to have all Nishorgo messages and communication coordinated from a single joint team, including sufficiently high-level government officials and the project staff.

Outreach through Print Media and Video

During its five years, more than 450 news articles were published about Nishorgo, along with several short television documentaries and features made by television stations themselves, and one documentary was financed by the project. The Nishorgo project achieved a high level of press coverage, but this required considerable efforts to facilitate visits and follow-up with journalists, otherwise coverage was low. For example, the Visitor Interpretation Center at Teknaf Wildlife Sanctuary was opened in July 2008. Although 15 print journalists and three TV stations attended the opening, only one TV station provided high profile coverage and not a single front or back-page news article appeared after the event. Although support had been provided throughout the field events, the necessary follow-up dialogue did not happen.

Lessons Learned

A number of general lessons have emerged from Nishorgo's communication program.

Lack of any single "champion" or small group of "champions" hampered the communications program. A national public program such as Nishorgo called for high level Government involvement in communications – which did not take place. Without champions and spokespersons for Nishorgo from within higher levels of government (above the level of the Forest Department), the impact was not commensurate with time and effort allocated to it. The idea of message management and strategic communications required for a national public program was somewhat alien to the public sector and required leadership from experienced private sector communicators. Future conservation campaigns would do well to include Bangladeshi marketing leaders and seek respected civil society or private sector expertise and champions in addition to leadership from the Government itself.

Target group identification for communication needs to be more refined and specific, both in group description and in expected behavioral changes. Nishorgo took a broad approach to mass communication. However, much of this effort resulted in messages reaching the already "converted" within the environmental community. The impact even for this community may be limited as these actors generally have their own agendas and may feel threatened by a competing "project." More effective communications activities should be tailored to the interests of well-defined stakeholder groups and the changes that are expected of them.

Communication efforts did not succeed in distinguishing in the minds of the public the national Nishorgo program separate from the Nishorgo Support Project. It was intended to create an "umbrella" program under which a wide range of potential partners could feel comfortable in collaborating with Forest Department. This aspect of communication will take longer and more effort to see a change in widespread understanding and perceptions of the Department, and will require greater ownership of communication by the Nishorgo program of the Department.

Conclusions

Nishorgo's communications program succeeded in establishing a name and image for a new national conservation program led and coordinated by the Forest Department. Awareness of this program is broad amongst environmentalists, the Bangladesh Scouts, young journalists, and civil servants. But the program is yet to become commonly recognized among the broader group of urban middle and upper class Bangladeshis and rural communities outside of Nishorgo pilot areas.

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Public-Private Partnerships in Support of Conservation

Philip J. DeCosse, Mehrin A. Mahbub, Sumaiya Firoze and Sadia Haque

When Nishorgo began in 2003, it was increasingly common for development programs in general, and conservation initiatives in particular, to seek ways of engaging the private sector in passive or active support roles. The possibility for corporate interest in conservation-friendly growth had by then been well established (Porter and Van der Linde 1995). Large NGOs and other development organizations had been exploring opportunities for finding synergy between the development and conservation communities (Heap 2000; Earthwatch Europe 2002; International Business Leaders Forum 2000). USAID had already adopted this approach: on May 11, 2001, the then-US Secretary of State Colin Powell had introduced the USAID Global Development Alliance as a programmatic approach to engaging the private sector in support of development initiatives.

In the conservation community, this focus on common interests between public and private sector conservation goals had also received considerable attention, not least by the IUCN (IUCN 2003; 2004). By the time of the IUCN Bangkok Congress in late 2004, 30 resolutions were passed associating the private sector and conservation, including Resolution 1.81 that urged expansion of "dialogue and productive relationships with the private sector" (IUCN 2008).

In light of these trends, the Nishorgo team sought from its earliest days to engage private individuals and organizations in a coalition of public and private actors in support of conservation. The team believed that forest conservation goals in Bangladesh would be most effectively met where individuals and private companies were engaged as active partners in that process, and that with careful planning, transparent management, and a focus on delivering services to people, the public and private sectors might collaborate for the common good.

The Nishorgo team thus undertook a number of initiatives aimed at engaging private sector support for conservation activities. The purpose of this chapter is to review a number of those initiatives and to draw lessons from the efforts made in building such public-private partnerships.

Starting Assumptions and Subsequent Adaptations

The "Nishorgo Conservation Partnership" Concept

In mid-2004, the Nishorgo initiative attempted to frame its strategy for public-private partnership in a proposed "Nishorgo Conservation Partnerships" program. The program identified five distinct ways in which private entities could take part in contributing to improvements in PA conservation (Mahbub 2004). The five areas were:

- Contributions to establishment of visitor services: Partners would be able to contribute

to a range of PA facilities, including small items like park benches and larger items such as visitor centers. Prominent signs would be placed in the PA to acknowledge a partner's contribution according to the level of contribution.

● Co-financing of communication activities or outreach: Partners would be able to provide funds for national or local campaigns or publications, in which the partners brand as well as the Nishorgo brand would both appear.

● Helping to improve livelihoods for people living around the PAs: Partners would provide direct support for livelihood activities for the poor living around a PA and dependent on that forest.

● Licensing of the Nishorgo image: Partners would pay a license fee to use the Nishorgo brand on products to be sold at the PA visitor centers (t-shirts, hats, mugs, etc.).

● Practicing PA-friendly behavior: This area of partnership was targeted at those companies operating in the immediate vicinity of a PA. Through this type of partnership, environmentally or socially responsible companies would be awarded the right to use the Nishorgo logo if they met "Nishorgo-friendly" criteria of behavior.

The same program document included a proposal that private contributions to PAs would be overseen by the independent non-government Arannayk Foundation for Tropical Forest Conservation, a foundation established under the Bangladesh Companies Act of 1994 with initial funds from the US Tropical Forest Conservation Act.

This Partnerships program was never formalized as a joint program of the Forest Department (FD) with Arannayk and the Nishorgo Support Project, nor was it ever formally approved. Indeed, at this early point in Nishorgo, there was little likelihood of obtaining formal approval for proposals to allow private firms, for example, to directly contribute to improvements inside PA lands. But the FD Project Director at the time nevertheless encouraged support for the "Nishorgo Conservation Partnerships" concept as a way of testing on a small scale how such partnerships might be accepted and work, and of establishing a number of examples that could demonstrate the viability of the concept. The first three categories of partnerships were subsequently developed through the partnerships discussed below.

Initial Partnership – the Radisson Water Garden Hotel

An early opportunity to test the partnership concept came with interest of the Radisson Water Garden Hotel, then under construction. The Managing Director at the time was approached by the Nishorgo team, and expressed interest in associating the hotel with an environmental image through Nishorgo. They subsequently financed the 2004 Tree Fair publication and also provided financing for advertisements about the Tree Fair in widely displayed banners in Dhaka that promoted both the Tree Fair and the Radisson brand.

Over the coming years, the Radisson continued to deepen its interest and involvement with Nishorgo's conservation efforts, resulting in 2008 in the inclusion of Nishorgo activities in the hotel's Corporate Social Responsibility (CSR) activities. Under the CSR, Hotel staff supported

Nishorgo's conservation efforts through donations to the Rema Kalenga Wildlife Sanctuary Co-Management Organization, training of eco-cottage owners in hotel and food management, and CSR visits to Nishorgo sites.

The Scouts of Bangladesh

In 2004, the Scouts of Bangladesh numbered just over a million members, of which some 20 percent were young women. The average age of Scouts in Bangladesh is much older than in Europe and the US, with a large number of active Scouts remaining members through their high school years.

As part of its partnership with Nishorgo, Radisson Water Garden Hotel hospitality staff have taught Nishorgo Eco-Cottage cooks about preparing table settings. [Md. Tarek Murshed]

The Scouts expressed an early interest in being associated with the Nishorgo conservation efforts, and in 2005 worked with Nishorgo to undertake a highly publicized series of PA-to-PA hikes. Young men and women Rangers (an advanced level of Scout) hiked first from Satchari National Park to Rema-Kalenga Wildlife Sanctuary and then to Lawachara National Park over the course of two days, led by an eminent ornithologist and outdoorsman. A few months later, a similar PA-to-PA hike was undertaken across the southern Nishorgo sites. These two hikes were covered by many television channels and local and national dailies (with an ATN Bangla camera team following the entire length of the hikes) and generated extensive awareness of Nishorgo.

In subsequent years, the Scouts have continued to be a part of rallies and events in support of conservation in general and Nishorgo in particular, including allocating activities and stalls for the Nishorgo initiative at many of their regional and national Jamboree events. In these events, the Nishorgo team conducted quizzes on Bangladesh's PAs to popularize and to build consensus for conservation of the PAs among the Scouts and demonstrated how to build and use improved stoves in a bid to save fuel wood.


The 2005 PA-to-PA hikes of the Bangladesh Scouts brought extensive television and press coverage to Nishorgo, and at low cost. [Left: Philip J. DeCosse; Right: Nishorgo Support Project]

The Nishorgo team forged strong partnerships with local scouts troops who continued doing hikes in individual PAs. The scouts in Srimongal and Moulavibazar areas came forward and helped the Forest Department to manage the large number of visitors that now come in the weekends to Lawachara National Park during the winter season.

Joint Financing of Books, Booklets, and Movies

In this same effort to build partnerships that could extend the awareness of Nishorgo's conservation work, the cell phone provider Banglalink was approached in late 2005 for its interest in associating with Nishorgo. With little hesitation, Banglalink's then-CEO approved financing for publication of 4,000 copies of a newly prepared "Visitor's Guide to the Protected Areas of Bangladesh." The attractively illustrated publication was the first ever practical guide to all the PAs of Bangladesh. At that time, Banglalink was in a rapid expansion phase, and was particularly keen to associate its brand with the environment, and in particular with the Sundarbans and tigers. Encouraged by the initial success, a year later, Banglalink provided further funding to print a Bangla version of the guide, and has subsequently sponsored the FD's tiger day initiative.

Later, in 2008, Duncan Brothers associated itself with Nishorgo through financing of a 200+ page color book on the wildlife of Bangladesh (Khan 2008).
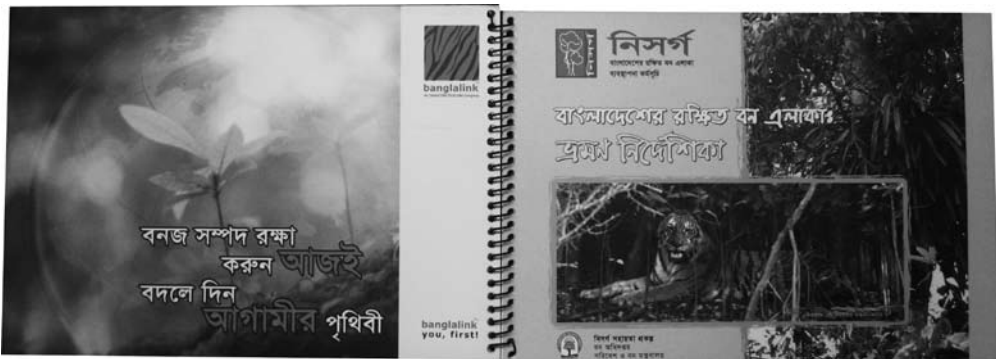

In 2004, the telecom Banglalink paid full costs for English and Bangla versions of the first 5,000 copies of this 48 page "Visitor's Guide to the Protected Areas".

Generally, the Nishorgo team found that obtaining financing or co-financing for attractive publications related to Nishorgo was not difficult. Private companies in particular were glad to associate themselves with publications, as long as the quality of the publication was high and they could include their logo and a corporate message. Publications are relatively less expensive than other activities such as national campaigns or alternative livelihood development for the communities around PAs. Furthermore, when donated funds are allocated to co-finance printing costs, the sponsor knows exactly how their resources have been spent, since the only significant cost and invoice is that of the printers.

Private partnership in communications also took the form of private individuals contributing their time and energy to books and movies associated with Nishorgo. In 2007 and 2008, the noted photographer and naturalist Sirajul Hossain travelled throughout all the Nishorgo PAs

and photographed the wildlife along with the people living in those areas, and the challenges they faced. The many months of effort he put into publication of this photographic journal – later to appear in the book "Images from the Wild: Travels Through Five Nishorgo Forests" (Hossain and DeCosse 2008) – was all contributed voluntarily. Nishorgo provided him with access to the areas and a vehicle to move his equipment around, but the rest of the work was his own private contribution.

Earlier, Enamul Haque and the Wildlife Trust of Bangladesh (WTB) had made a similar private contribution to Nishorgo through the creation of a video documentary about the Nishorgo effort – "A Nimble Walk through Five Protected Forests" – for which Mr. Haque travelled for weeks throughout the Nishorgo sites with his film equipment. This film was used extensively to communicate the activities of Nishorgo, both in meetings and on television.
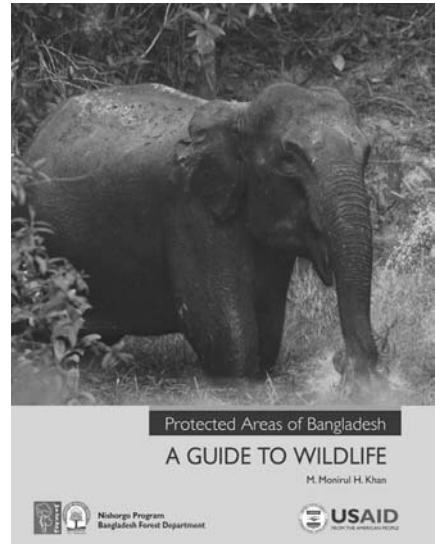
Duncan Brothers financed the printing of this book: Protected Areas of Bangladesh – A Guide to Wildlife.

Architectural Competition and Private Involvement in Construction within the Protected Areas

In this same vein of raising awareness while engaging private partners in conservation work, Nishorgo obtained approval to undertake a national architectural competition in 2006 to design a Visitor Information Center for Lawachara National Park. Private donations were sought to finance the competition, which would award financial prizes to the three top submissions. The design submitted by the winner would be later built within Lawachara National Park.

Engaging private contributions and leadership for this architectural competition was greatly aided by the owner of Bay Developments, who contacted other private firms that made substantial contributions, including AMK Steel and Mirpur Ceramic Works Ltd.

Undertaking this private competition for design work on public lands represented a novel activity for the Forest Department and for the Ministry of Environment and Forests. The proposal for this competition was made at the 3rd meeting of the Nishorgo Steering Committee on February 26, 2006 and although it was not formally approved as the time (the Committee's remit did not include approving proposed activities), no objections to it were registered. Subsequently, Nishorgo Support Project, in association with the Institute of Architects of Bangladesh (IAB), arranged an open architectural design competition to stimulate the most creative ideas for an environment-friendly design for a Visitor Interpretation Center. All member architects of IAB were eligible to participate. The competition was formally announced through advertisements in two leading daily newspapers, where the sponsor's name and logo were prominently displayed. The competition received an outstanding response from the architectural community. Eighty-one registrations were made, and 32 designs and models were submitted, of which 29 were judged technically responsive.

Three companies provided the money to run the national architectural competition to design a visitor center at Lawachara National Park. This advertisement appeared in national newspapers.

The Awards were given at a gala ceremony at the National Museum followed by week-long exhibition of the models and designs which drew over 5,000 visitors and extensive press coverage that highlighted the sponsors.

The winning design – prepared by young architects from Vitti Sthapati Brindo, Ltd. – was constructed in a smaller version at four Nishorgo sites, with one of those nominated in late 2009 for an Aga Khan architectural award.

For the fifth site, at Lawachara National Park itself, a subsequent proposal for public-private partnership was made in late 2007, for which permission was sought to construct the Visitor Center in its original design, with construction to be financed entirely through private donations.

A donation package was subsequently prepared and marketed, detailing information on the "Community Owned Nature Interpretation Center" (CONIC) at Lawachara National Park. From late 2007, private donations were collected from companies for the estimated USD 120,000 building, with early donations and interest shown by Mobile Lubricants, Rahimafrooz, and Lafarge Cement. However, during 2008, the issue of using private funds to construct a building to be operated by a Co-Management Organization on public lands was raised. Official approval of this arrangement only came after the Nishorgo Support Project had ended, in late 2009, when a letter was issued by the Secretary at the Ministry of Environment and Forests approving this privately financed construction on public lands. Fund-raising was at that time re-initiated.

Misses and Near Misses

These public-private partnerships certainly proved the viability of the concept, but there were also no small number of unsuccessful attempts at such partnerships, and it is worth noting the misses and near misses, and why they did not come to fruition.

For months in 2007, Nishorgo worked with Nestle Bangladesh on a partnership that would associate the Nescafe brand of Nestle with Nishorgo, in a campaign to be targeted to attract university students to drink coffee. The many hours of preparatory meetings for this campaign never resulted in an executed program. The Nishorgo team felt that neither Nestle nor Nishorgo could find a link between the Nescafe brand and PAs.

Nishorgo also worked to persuade HSBC to finance a national photo competition, but HSBC did not want to be constrained to focusing on the Protected Area system (the main focus for Nishorgo). Instead, it wanted to keep the photo competition topics broadly about nature. So, in this case, there was a gap in the central objectives between Nishorgo and HSBC.

The case of Grameen Phone (the largest mobile telephone provider in Bangladesh) presented a different challenge. Given its size, the Chief Executive Officer (CEO) of Grameen Phone explained that the company did not want to be a part of any initiative in which other contributors were involved. They preferred to finance a full program rather than part of a program, no matter the cost. The CEO at the time also expressed his concerns with the risk of being associated with a specific program (such as the Protected Area system) as opposed to more general concepts such as nature conservation. And yet Nishorgo's core communications objective for a partnership with Grameen Phone (and other private donors) would have been to communicate the existence of the specific national system of Protected Areas being co-managed by the Forest Department. Grameen Phone also raised concerns that loss of trees to theft within the system, for example, could reflect badly on Grameen Phone, and it would not be something they could control.

In late 2008, the Nishorgo team worked at establishing a partnership with Nokia Bangladesh, as part of Nokia's efforts to market its 3G phones to university students at the major public universities. Nishorgo proposed joint activities with Nokia in which the students would use their internet accessible phones provided by Nokia to visit and report on the 19 Protected Areas then within the system. In the end, Nokia decided to modify their campaign targets, and so this partnership did not come to fruition either.

Throughout the Nishorgo effort, a regular dialogue took place with Chevron, in which both sides explored opportunities for a mutually beneficial partnership. This seemed particularly appropriate given Chevron's presence (and its predecessor Unocals' activities within Lawachara National Park). However, political and local community concerns about Chevron's activities made establishment of a partnership difficult, and ultimately not feasible. Any public-private partnerships had to be acceptable to the FD senior staff and also to the Co-Management Organizations of the concerned PA, and in the case of Chevron, a partnership was not deemed appropriate by either of these parties at the time.

In one other partnership example, Nishorgo worked in a joint campaign called "Explore Bangladesh" with Guide Tours Ltd, the premier ecotourism company in Bangladesh, with financial support from Banglalink. The objective of this campaign was to raise awareness about sustainable nature tourism, and large events were held at both public and private universities in Dhaka. The program was launched at Dhaka University, where more than 400 students participated. However, in the end, the Nishorgo team found that this time-consuming campaign, while valuable as an education and sensitization campaign, was not so successful in raising awareness of the PA system. Instead, the core messages of the campaign were more generally focused on nature and responsible tourism.

Government Buy-in and Public Sector Support for Public-Private Partnership

As Nishorgo was implemented, government support for public-private partnership remained intermittent. Senior staff of the Forest Department actively supported the broad range of public-private initiatives, recognizing most of all the value demonstrating a new openness of the Department to partnership outside the government, but nevertheless being careful not to suggest that FD lands would be freely available for private marketing or other interventions. More specifically, the It was the willingness of those senior FD staff -- and particularly the Project Coordinators – to push the limits of what was acceptable that gave the Nishorgo team the support to proceed with such pilots.

By 2006, it had become clear that a more open public debate about the role of public-private partnerships for conservation would be necessary, so that a broader consensus of support might be obtained. The Nishorgo team accordingly worked jointly with IUCN Bangladesh to organize a "Public-Private Round Table" in 2006, at which the Secretary, Ministry of Environment and Forests and some 30 senior business executives discussed interest in and modalities for such partnerships.

The principal output from that round table was the strongly voiced support by private company executives for the kinds of partnerships that had been tested in the preceding years. Although there was no official decision taken at the round table, holding that event provided support for continued work on partnerships. However, it was not until 2009 that the Government formally supported public-private partnerships for conservation (in the aforementioned letter in support of the CONIC at Lawachara NP).

Lessons Learned

The time it takes to establish public-private partnerships is high, while the financial size of contributions tends to be low. The Nishorgo team accepted that the value of contributions would be seen more as a signal that private companies and individuals were interested in conservation than as a viable source of sustained financing. The contributions received (except for the CONIC) have generally been quite small, generally under 5,00,000 Taka (about USD 8,000).

Although association with a "green" image through Nishorgo was of interest to some companies, the more common interest of private firms was finding a mechanism for spending CSR funds on benevolent activities. CSR allocations are much more likely to be allocated to cyclone victims, or the blind, or acid survivors, or any number of direct human needs, rather than to the more abstract idea of the environment, or the PA system. Nishorgo learned to make its requests for partnership as specific and tangible as possible, and when it did so the partnerships were more easily completed. The companies felt more comfortable focusing their CSR activities on more popular and concrete themes. Such was the case, for example, when Nishorgo sought funds for high quality publications such as the "PA Visitor's Guide" and the "Wildlife of the Protected Areas" books. Moreover, companies need their contributions to complement their marketing and brand management efforts.

Private corporate donors tend to avoid partnership with official government systems or programs. Donations are easier to obtain where there is no involvement of the government, and this certainly made partnership work under Nishorgo more difficult, since the Nishorgo effort is a government program. Private corporations look for an accountable and transparent framework for providing finance. In its early dialogue with Chevron, Nishorgo proposed that Chevron provide support to the entire PA system, rather than just for the communities at Lawachara National Park. But Chevron hesitated to make such system-wide commitments, in part because of concerns about committing to a government program that might change or be less-well managed at a later date. Also individual government departments such as the Forest Department do not have the explicit authority to pursue public-private partnerships, thus making the decision-making for conservation support less clear and direct.

As pollution and environmental conditions in Bangladesh worsen, however, the attractiveness of associating with "green" partnerships such as Nishorgo seems to be on the increase. Later in the Nishorgo period it became easier to obtain private contributions of time and support than it had been in 2004, apparently due to the increased interest in an environmentally friendly image. At the same time, CSR efforts of companies are becoming increasingly sophisticated in their treatment of the environment, with creative companies such as Rahimafrooz and Radisson seeking to make a sustained commitment to conservation through their CSR programs.

Resources need to be explicitly allocated to maintain the partnerships over time. The partnerships need to be consistently renewed and maintained. A company such as Radisson, that explicitly includes Nishorgo in its CSR, needs to be supported in subsequent years, not least so that it can continue to have easy contact with the field level activities of the program. Indeed, a gap in such support from Nishorgo in 2008 was associated with a slowdown in the strength of Radisson's commitment to conservation. The Nishorgo team had hoped that an independent and private organization such as the Arannayk Foundation would take up this long-term facilitator role, in light of Arannayk's permanent status and its mandate to support conservation, but such activities were not at the time considered a high priority for Arannayk.

Multi-partner events are rarely effective. It is difficult to control the message when several private sector or other partners are involved in an event. Moreover, private sector partners prefer that their recognition for support is not mixed with that of other companies.

More avenues can be sought for successful partnerships, particularly those based on voluntary initiatives from individuals and civil society groups that become associated with the PA system. Perhaps the most effective of the private partnerships under Nishorgo were those with committed individuals that sought to offer their time and creativity to conservation. Time-based contributions, including especially those of the Scouts and a number of leading nature photographers, zoologists, and wildlife experts were among the most effective in communicating the work and objectives of Nishorgo.

Conclusions

This chapter has reviewed the experiences of Nishorgo with advancing the role of public-private partnerships in support of conservation. The Nishorgo team allocated considerable

energy and time to promoting these partnerships. Although the volume of financing generated by them was minimal when compared to the overall project resources, the range of partnerships have suggested a greater openness by the Forest Department in particular in welcoming expertise and interest from outside the government as it works to improve forest conservation.

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Perspectives and the Way Forward

Sundarbans
[Zaid Ahmed]

Perspectives on Participatory Forest and Protected Area Management

Abdul-Muyeed Chowdhury

It is common knowledge in Bangladesh that our forests have been decimated in recent decades. Less apparent than the loss of forests is the loss of other goods and services that forests provide, particularly to the neighboring poor people, whose well-being and livelihoods depend on these forests.

Rural homesteads all over the country have vastly increased tree production in recent decades, but according to certain experts, the collective tree production of households will never be enough to meet the energy or construction needs of a fast-growing population. Commercial fuel wood sellers hire the poor to comb through existing Reserve Forests and Protected Areas to extract whatever they can to sell. Brick-fields are constructed inside or next to Reserve Forests to use wood as a primary energy source.

Disappearance of mature commercial timber is as serious as the wood supply situation. The commercial demand for timber for construction of homes and boats will continue to increase and prices, too, will increase over time. Timber fellers will more aggressively extract wood from National Parks and Wildlife Sanctuaries to meet demand, further endangering the already fragile biodiversity of the country.

The problem of over-extraction has been accentuated by land-grabbers, often with powerful political protection and bureaucratic support. The sal forests of Bhawal have now been legally titled for factories, homesteads, and other private uses. Other forests have met with a similar fate in varying degrees.

Many of our forests are already "dead," meaning that there are no saplings in the lower and middle story to replace the older trees when they die.

Taking into account the experiences of the Nishorgo Support Project supporting Protected Areas and other programs that have targeted forest management, the following shortlist of priority actions emerges if Bangladesh is to recover the healthy and productive forests it once had.

Lessons Learned

Enable poor communities to invest in forest protection and benefits

Today, throughout Bangladesh, many poor communities might leap at the chance to protect nearby degraded forest, but the Forest Department is required by current law to keep them from doing so. In Reserve Forests, there exists no viable policy or procedure by which the local poor can invest their time or capital in protecting and restoring forests and expect to

have any benefit in return. The social forestry model has been successful so far but expansion is restricted by the fact that capital investment has come from the government. Government funds are limited and in the face of competing demands participatory management of forests is given low priority.

Nepal has addressed this issue with a widespread movement for community forestry supported by laws formally devolving responsibilities and rights to communities. India's Joint Forest Management does not require heavy government capital investment and control as is the case in Bangladesh. In Bangladesh, there has been some discussion over allowing communities engaged in PA protection to benefit from buffer areas at the edges of PAs, but there is opposition to such proposals.

Communities need to see clear benefits if they are to play a sustained role in forest protection. [Md. Tareq Murshed]

The poor need a clear opportunity to invest their time and energy in protecting forests in ways that benefit them. A model needs to be adapted that can feasibly cover all the barren areas of the country. We could develop a community forestry process for Reserve Forest and khas lands, or we could modify the Social Forestry Rules to allow a "formula" that does not require government investment (and does not demand a share in benefit either) in the greater interest of the country and its economy. New Social Forestry Rules, signed in 2009, now open the door to this kind of community investment, but they have not been tested.

Biodiversity in PAs and in Reserve Forests will not be protected until those forests can be protected, and incentives for protection will remain weak as long as local communities have no mechanism for investing their resources in those forests.

Enable private investment in commercial timber production

Across many sectors, the government has divested itself of failed monopoly businesses, but not in commercial forestry. It is time for the Forest Department to structure transparent and fair concessions under which timber companies would invest their own money and management experience to raise commercial plantations on a sustainable basis. Without immediate investment in commercial timber plantations, our wildlife spaces will be decimated to meet the timber needs of today and tomorrow.

Allow forest benefits to be kept by beneficiaries at the time of transaction

In spite of its shortcomings, social forestry has been one of the great successes in the past two decades because holders of social forestry certificates receive the benefits of their timber

immediately after felling and auction. A 45% share in standard social forestry agreements goes directly to the local participants. The general principle of revenue-sharing included in Bangladesh's social forestry model needs to be extended throughout the forest sector, to other types of forestry (such as community forestry adaptations) and to Protected Areas.

The assumption of those who oppose the local retention of income in social forestry is that any value generated on government land belongs only to the government and must be centrally collected by it. Only then can a share be returned through the budgetary process. This central collection is done to comply with the concept of a consolidated government fund, into which all revenues must go. Donors, by continuously pressing the government to increase the size of its kitty, are compounding the problem. While the need for more revenues cannot be denied, it has to be done by increased collection of direct taxes. However, the argument that all value generated from public lands should be routed through the government budget and accounts is fallacious – in wetlands and fisheries, use rights are leased out and that income goes to the treasury (exchequer). Thereafter, however, the designated user communities retain any income they generate from the resource from following management plans agreed with government. There are therefore longstanding precedents for possible arrangements that would enable community (or for that matter commercial) management of forest lands of all types.

Conserving forests requires local participation and benefit-sharing and if all produce of value (fees, timber, etc) are to be monetized and entered into the government fiscal accounts, then it will never be sustainable to have local participation through benefit-sharing.

This problem has become apparent for Protected Areas. In some of the Protected Areas, community members are patrolling the forests day and night to protect them. It stands to reason that retention at source of an agreed portion of the generated fees from activities should be allowed to pay for the services provided by the patrollers. These patrollers come from very poor families who need the cash on a daily basis for their survival. Even today, the system of retention of the fees at source is not in place. Real incentives need to be offered to communities to protect forests and wildlife throughout the country. Communities can be active protectors of forests, but they must see the benefits for their survival immediately. When all moneys go into the government revenues, people lose interest, since they firmly believe the system will cheat and deprive them of their due.

Publicly end the revenue targets implicitly handed to the Forest Department

As things stand now, the Forest Department has annual revenue targets to meet. It spends considerable time and energy to meet revenue generation targets set for it by the Ministry of Finance. This is a legacy of the colonial administration that

Seized timber is stored within the PA arrival areas, such as here at Satchuri National Park. The timber is later sold at local auctions, with all proceeds going to the central treasury. [Philip J. DeCosse]

needs to be changed. The prime responsibility of the Forest Department should be to protect the forests and to enhance the forest cover in the greater interest of the environment since climate change puts a much greater strain on the country and its economy through crop failures and natural disasters. Tree cover is the best protection against climate change. This does not mean the FD should not generate revenue from various activities relating to the forests, but the emphasis should shift from revenue to forest cover.

Pushing the Forest Department to squeeze more revenue out of forests, when forest cover is in such severe decline, is detrimental to the health of the country. The nation incurs a much higher cost to meet the adverse effects of climate change than the benefit it earns as revenue from the forestry sector.

Quantify and communicate the enormous non-market value of forests

In early 2008, the World Bank proposed USD 2 billion to reinforce our coastal zone against future cyclones and sea level rise. It is obvious that the standing forests of the Sundarbans eliminate the need for protective works at such enormous costs. It would be madness to cut down the Sundri trees in the Sundarbans to meet the annual revenue targets set for the Forest Department. But the irrational message from the budgetary system is that we should.

Some efforts are being made in Bangladesh by the FD to raise coastal forests with government investments, but a lot more can be done by involving the local people who will benefit most from protecting and nurturing these forests. We have not allocated sufficient importance to the enormous economic value of coastal forests as protection against sea level rise and storm surges. Nor have we given due importance to other non-cash values derived from forest ecosystem services such as regulating the flow of water into our wetlands and reducing siltation. The forests covering hills in the Sylhet Division regulate water flow into the water bodies (beels and haors[1]) of that region, ensuring longer and more productive fishery seasons. Flash floods and earlier-than-normal drying of beels occur more frequently when upland forests have been cut down. These valuable wetlands also silt up rapidly without forest and sound land management in their watersheds. But pressure to generate revenue and meet timber needs is behind the depletion of many of these upland forests.

Make our forests carbon production centers for the poor in rural areas

We are hearing more and more about climate change, and some steps are being taken for Bangladesh to adapt to future climate changes. But we hear very little about one of the lowest hanging fruits in the carbon area in Bangladesh – enabling the poor to develop and restore forests as carbon sinks that generate cash income.

The poor need mechanisms with which they can invest in forest conservation and management, not just to benefit from fuel wood or sustainably harvested timber, but also to benefit from revenue generation linked to carbon sinks.

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[1] Haors are extensive seasonally flooded saucer-shaped depressions in northeastern Bangladesh, the deeper parts that hold permanent water here and in other parts of Bangladesh are known as beels.

At today's carbon prices, one 8,000 hectare forest south of Chittagong would generate a carbon value of USD 2 million, or an annual benefit stream of more than 1 crore taka per year. With literally hundreds of thousands of hectares of deforested – but potentially highly productive – public forest lands around the country, millions of US dollars could be generated for poor communities acting to restore and protect those forests. This would greatly accelerate our journey towards a poverty-free Bangladesh with no or very little additional expenditure from the government. We need to have an easy framework under which NGOs and Community-Based Organizations could register to have their carbon projects easily recognized by the global framework. This needs to become a priority if the poor are to benefit and forests are to be restored.

Recognize and accept the existence of a profound and persistent bias against ethnic minorities in forest areas

One of the most persistent biases in the Bangladesh forest sector is against the ethnic minorities that have lived for generations in our forest areas. There seems to be a deep concern that if we give any recognition to these minorities, we will lose the land to them.

It is time to recognize and publicly accept the basic fact that these people have indeed lived for centuries in these forests, and thus may legitimately be called "indigenous peoples." That may or may not mean land rights, but should recognize valid historical rights. We may take lessons from the historic declaration in the Australian

Foresters at Lawachara National Park in December 2004 saw their primary role is using force to protect the forests. [Philip J. DeCosse]

parliament regarding indigenous peoples in that country. In our case, such recognition is needed for our own good as much as for the good of the indigenous people themselves. Indigneous peoples' knowledge can help in the regeneration and sustainability of our forests and thus help us fight climate change and its adverse impacts on the entire country.

Make "transparency" and formal "participation" the two leading characteristics of the entire forest sector

The Forest Department has in recent decades come to be seen by many as synonymous with opaque management processes and a lack of participation. Social forestry has begun to reverse this image, as has te FD's efforts to reach out to community members around Protected Areas under the "collaborative management" processes reviewed in this volume and developed through the USAID-funded Nishorgo Program. But more work remains to be done. The heart of the change needs to be a public, simple, and clear acknowledgement that the Forest Department is committed in everything it does to two central principles: transparency and participation.

How the new focus would be achieved is not entirely clear, but without this focus on transparency and formal participation, it will simply not be possible to protect the forests we still have, and to restore those we used to have.

Progress on these eight urgent actions would improve fuel wood supply for the poor, commercial timber supply, coastal zone protection, wildlife populations, nature tourism opportunities, fisheries productivity, and possibly even temperature regulations, not to mention the intrinsic biodiversity benefits of protecting our many species of plants and animals.

This chapter was originally published as an opinion piece in Daily Star, Saturday, May 3, 2008.

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Re-Visiting the Context for Co-Management

Philip J. DeCosse and Azharul H. Mazumder

An earlier chapter of this book summarized the legal, policy, institutional and socio-economic conditions at the time Nishorgo began. The intervening years have provided the opportunity to revisit those contextual elements.

The purpose of this chapter is to identify a set of more specific factors that have influenced the way co-management has evolved in Bangladesh, and in particular have framed the choices of key stakeholders involved in the process. Rather than referring to observable legal and policy conditions (such as the Bangladesh Wildlife (Preservation)(Amendment) Act 1974 or the National Biodiversity Strategy and Action Plan for Bangladesh), socio-economic conditions (such as levels of poverty or rates of economic growth), or organizational conditions (such as proportion of Forest Department staff trained in participatory management), the "factors" included here aim to capture the specific social, institutional and cultural contextual frameworks in which the decisions of individuals are made concerning conservation. These framework "factors" may better explain the behavior of participating stakeholders in co-management than does the formal and standard review of contextual elements presented earlier.

The "factors" identified here are of two broad types: assumptions and beliefs that can frame decision-making, and descriptors of the social or institutional environment in which decisions are made. The category of assumptions or beliefs includes factors (see box) 2, 7, 8, 9 and 18, while the social and institutional context includes 3, 5, 6, 10, 11, 12, and 14.

The context for co-management in Bangladesh presents a number of differences from co-management as it has been

Bat cave, or Kudum Goha, at Teknaf Wildlife Sanctuary, one of many popular locations within the PA system. [Philip J. DeCosse]

practiced and described in other countries. Assumptions about what models of co-management might work for the specific needs of forest PAs in Bangladesh were informed by the experiences of other countries, in particular those written about by Borrini-Feyerabend et al. (2004) and Kothari et al. (1998). In a number of cases, the Nishorgo team made assumptions about the context for co-management, only to find that those assumptions were too general, or not as helpful as had been expected. This is certainly the case for our assumptions about the extent to

which stakeholders would be willing to assert their rights in the face of established authorities, when given the opportunity to do so.

The factors are grouped by the co-management participants they most affect. The first six are ones which affect the decisions made by local stakeholders at PA sites. Those affected here are the non-government stakeholders that were targeted as likely participants in the collaborative management process. Generally, empowerment of this group was slower than had been expected at the outset, and these six factors help to explain why that was the case. The second group of factors covers those that have framed decisions of the Forest Department: the government officers most directly and fully engaged in the forest co-management process. It became increasingly clear over time that the officers and staff of the Department were responding to a number of internal beliefs and incentives, and these six factors attempt to capture them. Finally, we identify six factors affecting all participants in the co-management process, from communities to Forest Department but also including the broader set of government officials and civil society that have a role, albeit secondary, in the co-management process. The factors affecting these three broad groups are identified below.

18 Contextual Factors for PA Co-management in Bangladesh

FACTORS AFFECTING COMMUNITY-LEVEL CO-MANAGERS
(1)   Nowhere in Bangladesh is "remote": government presence and authority is asserted throughout the country.
(2)   Local stakeholder hesitancy to challenge the status quo.
(3)   The complexities of identifying and working with "the community".
(4)   The limits of social forestry as a participatory model applicable to co-management.
(5)   Wider than expected social acceptance of corrupt behavior.
(6)   Physical threats and violence associated with political interventions in PA management.

FACTORS AFFECTING THE FOREST DEPARTMENT
(7)   Revenue generated from public lands must be forwarded to the central treasury.
(8)   Forest management oriented to maximize revenue.
(9)   Limited financial resources and training for conservation interventions in PAs.
(10)   Forest Department traditions of education, discipline, social status and conservatism.
(11)   Changes in trends and financing of large-scale forest projects.
(12)   The evolving public image of the Forest Department.

FACTORS AFFECTING THE FULL RANGE OF CO-MANAGEMENT STAKEHOLDERS
(13)   The precarious situation of minority indigenous groups.
(14)   A unique confluence of poverty and high population density.
(15)   Competing pressures from commercial extraction versus local household use.
(16)   The dramatic scale and speed of resource extraction.
(17)   Protected Areas as domestic tourism destinations.
(18)   Powerful cultural roots of a conservation ethic.

Factors Affecting Community-level Co-Managers

 (1) Nowhere in Bangladesh is "remote": government presence and authority is asserted throughout the country.

In her summary review of community-based forest management in Africa, Wily argues that collaborative and community-based forest management regimes have arisen on that continent as a means of "giving legal recognition to the millions of citizens who in practice have been serving (with variant effort and effect) as forest guardians in default of the reach of the state" (Wily 2002, p 5). Her observations about this "default of the reach of the state" is echoed in the logic for community-forestry in Nepal as well as in joint forest management in India, where in places such as Orissa, neighboring communities brought degraded sal forests under community management. Where the government has limited effective authority over natural resources, then the rationale for engaging communities is strengthened.

The PAs that served as the target areas of Nishorgo were remote by comparison with other parts of the country. The areas around Rema-Kalenga Wildlife Sanctuary and Satchuri National Park, for example, are scarcely populated by comparison with other areas in Bangladesh. Other than a small number of Forest Villagers at Rema-Kalenga and one other at Satchuri, there are no residents within these two PA, and the population in the immediate buffer areas is also small.

Even the most "remote" of the PA have been criss-crossed for decades. Here, in the hard to reach Rema Kalenga Wildlife Sanctuary, can be found this tomb of a Freedom Fighter from the Liberation War. [Philip J. DeCosse]

Forest Department staff presence in these forests has also been sparse. The nearly 1,795 hectares of the Rema-Kalenga Wildlife Sanctuary was at the time of Nishorgo's initiation under the authority of one Range Officer, three Beat Officers and 12 Forest Guards, all of whom depended on walking or taking rides from motor or bicycle rickshaws to access their area. A similar lack of Forest Department presence existed at the other five Nishorgo PAs.

Given the remoteness of the areas, at least by comparison with other parts of the country, the Nishorgo team assumed that neighboring communities would step in to fill the gap left by a relative absence of government, and thus take a stronger role in the co-management governing process.

As the Project's implementation progressed, however, the authority of the Government, and especially of the Forest Department, in even relatively remote areas of the country, became increasingly clear.

The authority of the Government in remote rural areas is enforced by a highly centralized government structure that has concentrated power even as proposals for decentralization have

been discussed by recent governments (Asaduzzaman 2009, Panini 2006). An analysis from 1999 observed that: "a top-heavy bureaucracy with its bastion at the secretariat has become the source of all power. This centralized administration has established absolute authority over all aspects of the state from policy formulation to program implementation" (Transparency International Bangladesh 1999).

Bangladesh is divided into seven administrative divisions, and further divided into 64 Districts (Zila) and then Sub-Districts (Upazila). None of these administrative levels are managed by elected officials, all are instead managed by officials appointed by the central government. Only at the lowest level of political sub-division – the Union – are local councils elected. This lack of devolution of authority in general has permeated the thinking of officials (civil servants) in their attitudes of control and authority rather than responsiveness to local needs or being willing to share responsibilities.

The central government can thus exert authority over the most local level of resource management. And this authority certainly applies to the Forest Department, which maintains full authority over all Reserve Forest as well as Protected Area lands. The implication of this authority is that nowhere in the forest system is beyond the authority of the Government. Central government officers – including the Forest Department staff – are expected to assert their authority sufficiently to ensure management of those resources under their statutory control.

In remote forested areas, Forest Department staff members have long been recognized as the principal government authority, even over the police or administration, neither of which in earlier times had much presence in these areas. Local residents living around PAs have known for decades that they would benefit from recognizing the authority of local government officials, including the Forest Department. Studd recounts this anecdote from her 2004 review of the conditions for co-management at Nishorgo sites:

> "A former ACF near Chunati told this story. In the 1980's, he was requested by the then CCF to report the names of all encroachers in newly-created Chunati Sanctuary. The ACF wondered how he would get these names for submission to his CCF. Upon asking one of his Beat Officers, the Officer told him: 'Boss, it is very easy to get the names. Do you see the people in line in front of my office? They are all asking me to write forest offences against them for encroaching in the Sanctuary.' Those local citizens were smart enough to realize that such a formal offense filed by the FD would -- in the future -- constitute grounds for a land claim." (Studd, 2004, p 10)

Thus communities have long recognized the authority of the central government, even as they have found creative approaches for taking advantage of it.

(2) Local stakeholder hesitancy to challenge the status quo.

Understanding that Government authority, even in remote areas, might be an obstacle to participation in co-management, the Nishorgo team pushed for a formal and written declaration of community authority. To that end, work began in 2004 to craft the new Government Order (GO) for co-management, and that GO was signed in 2005. As the GO was being developed and after it was released, senior staff of the Forest Department, and particularly the Conservator

of Forests responsible for Nishorgo, made repeated visits to Nishorgo community co-managers with the objective of encouraging them to stand up and take a more active role in PA co-management.

The team assumed that the GO, with its explicit recognition of co-managers as actors and beneficiaries of PA sites, would stimulate an increased willingness by communities to assert their authority vis-a-vis the Forest Department and other local Government representatives. But (as discussed more extensively in chapters 4, 5 and 6), the pace of that empowerment did not match what was expected.

The implementing team – including the authors – assumed that it would be able to facilitate a process by which local stakeholders would take advantage of these new opportunities to assert rights and obtain benefits from the PA management process. But the team – including the field-based NGOs directly interacting with the affected stakeholders – was not as effective at facilitating this empowerment process as had been expected.

The slow pace at which the empowerment process was facilitated ran counter to the understood capacity of leading NGOs to support this process. We had understood that our partner NGOs would be able to assist local stakeholders in challenging existing Government authorities to obtain the rights due to them in the GO and other instruments. Most NGOs in Bangladesh – including our implementing partners – aim to assist poor communities in challenging authority.[1] The Nishorgo field NGO partners RDRS and CODEC had done extensive working in assisting the poor to federate and claim rights from established authorities.

At this 2004 meeting of stakeholders from Chunati Wildlife Sanctuary, elders listen as one of the younger men has his say. Even amongst the elite local populations, few are willing to challenge the status quo. [Philip J. DeCosse]

It gradually became apparent, however, that the particular context in which NGOs operate in Bangladesh puts them in a precarious position when asked to assist communities in challenging existing authorities, and particularly Government authorities. The Government has at times formally limited NGO operations, and such challenges have led NGOs to focus more on economic and social development where there is less of a challenge to existing powers or authorities (see Feldman (2003)).

These findings certainly applied to Nishorgo's sites. Even with a signed GO giving communities authority, signed management plans further clarifying those authorities, and the active verbal support of senior FD officials, local community members have still not actively

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[1]   For example, BRAC's Social Empowerment goals (included at www.brac.net) include this language: "We aim to empower the poorest people by increasing their human, social and political assets so they are aware of their rights, can claim their entitlements and resist exploitation."

challenged the status quo. The team recognized a persistent hesitancy, even a sustained fear, and recognized also that this hesitancy would need to be overcome in any future attempts to further co-management.

(3) The complexities of identifying and working with "the community"

The IUCN has recognized that global biodiversity "survives on territories under the ownership, control, or management of indigenous peoples and local (including mobile) communities." Such sites, which the IUCN refer to as Community Conserved Areas (CCAs), are distinguished by two primary characteristics: (1) predominant or exclusive control and management by communities, and (2) commitment to conservation of biodiversity, and/or its achievement through various means.[2]

Wily's review of community-based forest management in Africa referred to the management of forests by "communities" (Wily 2002), and Borrini-Feyerabend et al. (2004 p 16) suggest that co-management may be considered appropriate where "local actors have historically enjoyed customary/ legal rights over the territory or resources". One of the important elements of co-management has been recognition of traditional institutions and rights of communities by government.

As Nishorgo's implementation evolved, it became increasingly clear that such concepts of "community" or "communities" created confusion when applied to Nishorgo pilot PAs. Early in the appraisal processes, the team attempted to understand and delineate the "community" of individuals and groupings affected by each PA. But at Nishorgo PAs, it was difficult to define who the target community included. The population living in and around each PA could come from multiple ethnic groups, have migrated from other areas around the country, and is governed by a variety of local, regional and national authorities.

Of those factors making it difficult to interact with a well-defined PA community, among the most important is the absence of a politically recognized representation at the scale of the villages or hamlets that surround the PAs. In other countries of South Asia, representative governance takes place closer to the level of a village than in Bangladesh. India has its recognized Gram Sorkar and the Gram Panchayat system. Nepal has a long history of village level Panchayat councils for any village with over 2,000 citizens, with these Panchayat evolving since the 1962 Panchayat reforms into Village Development Committees (VDC), a locally elected body. In both Nepal and India, a long tradition of recognized local governance has evolved today into village-based institutions that represent the needs of citizens at a local level.

There exists no parallel system of elected governance at this local scale in Bangladesh. The lowest level of elected representatives is the Union Parishad (UP). The number of people represented by this elected authority is much larger than the VDC in Nepal or the Gram Panchayat in India. As a result, individual villages directly adjacent to and affected by a PA have no recognized elected leader, instead there are UP or council members that they elected at the ward level (with three wards in a Union), and in any case most power in the UP is in

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[2]   Recommendation #26 for the 2003 World Parks Congress, on "Community-Conserved Areas".

the hands of the chairman. However, the chairman of the UP may live kilometers away and be scarcely affected by the PA.

There is not, in short, a close overlay between the most decentralized of elected governance structures and the Nishorgo PAs. The UP boundaries and concerns typically go well beyond PA boundaries, but there are no other elected or accepted community leaders that can speak directly for the concerns of people using a PA.

These challenges to dialogue with a local PA-affected "community" are made worse by the politicization of the Union Parishads themselves. In order to be nominated to run for the position of UP Chairperson, the candidate must have the blessing of a national political party, and remaining in the post of UP Chairperson requires that one maintain the favor of the relevant party hierarchy, whose local interests may be – and often are – at variance with the needs of conservation in a PA.

Gaps in the efficiency and responsiveness to local needs of UPs at Nishorgo sites were not outside the norm for other parts of the country. In reviewing the decentralized local governance initiatives in Bangladesh, Sarker (2006: 1308) concludes that: "Despite considerable efforts made over the years no effective and viable local government system has emerged in Bangladesh. Central control through local bureaucracy and the politicization of the management of local government affairs have been systematic phenomena."

In addition to this issue of political representation, extensive internal migration in Bangladesh has further fractured the idea of community. At Teknaf GR, the Rohinga refugees that have migrated to refugee camps and elsewhere throughout the peninsula cannot – for political reasons at the national level -- be formally engaged in any dialogue about the PA from which many of them are surviving hand to mouth.[3] At Lawachara NP, other than the indigenous communities living in and near the PA, many inhabitants of the other villages migrated to the area in the 1950s. These villagers had little historic attachment to the forest. Still today, it is the migrant communities at Lawachara that are most often accused of taking part in illegal forest extraction. The villages around the other Nishorgo pilot PAs are also heterogeneous, and this has rendered it more difficult to engage in a dialogue with communities both affected by and interested in the PA resources.

The difficulties of defining and recognizing "community" have been identified elsewhere as a particular challenge to the design and implementation of co-management initiatives (see, for example, Carlsson and Berkes 2005). But the extent to which the very idea of pre-existing "community" around Nishorgo PAs fails to resonate, or have practical application, is particularly extreme. There is so much diversity of ethnic, political, and socio-economic

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[3] Many of these refugees survive by combing the forests near refugee camps to cut any twigs, trees or branches they can find, selling them to the nearby brickfields or traders, and using the rest. In 2007, a proposal was made to disseminate improved stoves to the refugee camps, a proposal that would have both reduced fuelwood extraction and improved health conditions in the camps through the chimneys that accompanied the stoves. But as a Government project, Nishorgo could not formally take part in any such support, and in any case the then-Director of Medecins Sans Frontieres refused even to consider accepting this assistance, believing instead that the Americans should take steps to fully recognize the refugees rather than providing small scale support such as stoves.

groupings near any given PA, and such lack of clarity about the appropriate community representatives to engage in the process, that the Nishorgo co-management process became one of artificially defining "communities" by their association with and dependence on the affected PAs themselves. It became increasingly common and appropriate to use the term "PA community" as a name for the loose groupings of individuals and villages that have emerged around interest in and management of a given PA.

(4) The limits of social forestry as a participatory model applicable to co-management

As Nishorgo began, a number of leading FD officers argued that the rapid expansion of Bangladesh's social forestry in the 20 years preceding Nishorgo would make concepts of participation in forest management more readily accessible to potential co-management stakeholders. Under the most common model of social forestry employed by the Forest Department, a single person is given usufructury rights to one hectare of degraded forest land on which the Forest Department pays to plant fast growing trees, usually exotic species. The Forest Department harvests the plot after 10 years, and under the Social Forestry Rules 45% of the proceeds from auction are handed over to the beneficiary.

Social forestry has become widely known and applied throughout the country, with mixed results (see Khan et al 2004). Apart from any of its negative outcomes, it has also become extremely popular in many parts of the country, as individuals have come to recognize the opportunities for income generation from land heretofore off limits to anyone other than the Forest Department staff. Prior to the introduction of social forestry within the Forest Department, neighboring communities had virtually no formal involvement in the management of trees and forests on public land.

In spite of these benefits, however, the nature of participation as effected under social forestry did not in the end provide the expected basis for the participation process in PA co-management. Under social forestry, after all, the selected beneficiaries (the term used by the Forest Department) received the selected hectare from the FD, including all saplings and preparatory materials (fertilizer, etc.). The FD also paid to have the field plots cleared and prepared. So, in the end, beneficiaries had little involvement in the process other than receiving their right to maintain the planted plot, and benefit during thinning and later harvest. Moreover in this social forestry model interaction is with individual beneficiaries and there is no interest in having forest users cooperate in management of commons, instead the use rights are individualized.

Social forestry generates direct revenue for participants, evident here as a check is passed directly to one of the beneficiaries. But participation in social forestry is of a different nature entirely from co-management.
[Forest Department]

While it is true that social forestry has expanded over the past two decades in Bangladesh, and that the model has allowed for many thousands of individuals

to become more active participants in forest management, the model did not provide a strong foundation for local stakeholders to adapt under the Nishorgo co-management process.

(5) Wider than expected social acceptance of corrupt behavior.

During each of the five years from 2001 through 2005, Bangladesh received the lowest scores of any countries ranked in Transparency International's "Corruption Perceptions Index" (TI, 2001-2005). A number of valid objections have been raised to the methodology for this index, not least that the relative freedom of the press in Bangladesh allowed more such stories to be reported. But whatever the precise ranking, it is fair to say that corruption is indeed pervasive at the local level of government where co-management is being piloted and that this corrupt behavior has had a formative impact on the way in which co-management has evolved, and can evolve in Bangladesh.

In part due to this context of corruption, those invited to take part in co-management begin with assumptions that other stakeholders may be involved for reasons of illicit self interest. The trust required to establish a new governing body has been difficult to develop, with accusations common across participants. Non-government participants assume in particular that government officials are likely to be involved for self-interested reasons.

Where recourse to the justice system is required in and around the PAs, it is widely accepted that illicit payoffs or political influence can help to alter enforcement actions, including actions against illegal felling of timber. Such irregularities in the justice system arose in multiple cases of illegal felling in five years at Nishorgo sites. Repeatedly at Chunati WS, Rema Kalenga WS, and Lawachara NP, legal cases filed against individuals for being involved in illegal logging have been slowed or stopped, and it is widely understood that this is due to illicit influence.

The continued presence of brick fields within the boundaries or immediate buffer areas of two Nishorgo pilot sites further demonstrates the corrupt context in which co-management must operate. The Bangladesh Environmental Lawyer's Association had by 2008 filed cases against owners of brick fields illegally located near Chunati and Teknaf PAs, but none of those was successfully prosecuted.

At all PAs, it is widely assumed that corruption occurs regularly around timber extraction. [Nishorgo Support Project]

The readiness of local co-management stakeholders to believe in the possibility of collaborative governance – meaning collaboration with the Government – is constrained by the corrupt behavior they see around them. Overcoming this fundamental lack of trust in government has required persistent efforts at all sites, and remains a challenge even as co-management organizations become stronger.

(6) Physical threats and violence associated with political interventions in PA management

Pervasive corruption emerges in a particularly tangible form when violence and political influence are used to enforce illicit practices, and such violence has been a common feature at PAs where co-management has been piloted. In the short time since Nishorgo began, armed gangs at pilot sites have repeatedly attacked community patrol groups, with one community patrol member murdered, four put in hospital and many more injured. Where assaults and violence have taken place, it is understood that illicit logging, using force if necessary, has the backing–or at least is in the knowledge–of local elite persons as well as central political authorities.

A 2005 incident involving clear-felling within the Rema-Kalenga Wildlife Sanctuary provided just one of many tangible examples of the ways in which politically protected individuals can intervene in forest management. At that time, nearly 200 hectares of mature mixed teak and other hardwoods was clear-felled within the boundaries of the Wildlife Sanctuary. It was widely believed and understood that the Range Officer responsible at Rema Kalenga at the time had high level political protection.

The Co-Management Committee of Rema Kalenga made pointed and public note of the laxity of this officer, and did so at considerable risk of retribution. However, the concerned Range Officer was only moved to another post, with no proceedings ever started against him. Within the Forest Department, those officers who knew of this man's behavior knew also that it was dangerous to take open action against him.[4]

In the Forest Department the posting of lower ranking staff – and particularly those appointed in the powerful role of Range Officer – was at times alleged to have been carried out at the behest of (or with the approval of) the minister himself. In the face of organized and at times illicitly-operating political structures, it is understandable that poor and disenfranchised citizens hesitate to speak up and demand their rights in managing protected areas.

Factors Affecting the Forest Department

The six preceding factors help to explain the choices and decisions of those stakeholders bordering the Nishorgo PAs. The next six factors identified below help to explain the decisions taken by Forest Department staff.

(7) Revenue generated from public lands must be forwarded to the central treasury

Protected Area co-management requires a degree of benefits sharing with those communities engaged in conservation. In Bangladesh the potential benefits to share from PA lands and the surrounding Reserve Forests (all five of the Nishorgo PAs are bordered by Reserve Forest) are significant. Rich soils and high rainfall combine to form fast-growing forests, while a growing

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[4]   Mid- and senior-level Forest Department staff have regularly attempted to counter such organized corruption. In the Rema-Kalenga case, two senior officers worked with the Rema Kalenga Co-Management Committee as the Committee formed its strategy against the Range Officer. The two senior foresters knew that if they were to directly call the Range Officer to task, they would have risked retribution from one or more of the highly placed political protectors of the Range Officer. They recognized also, though, that if the people of the area – in this case through the Co-Management Committee – were to voice its concerns openly about the officer, then the two officers would be protected.

middle class and interest in nature tourism create tourism-related opportunities. The formal sharing of benefits from these resources requires a legal or institutional framework.

As Nishorgo began, the social forestry model provided the country's most compelling opportunity for direct sharing of revenue generated from government land with beneficiaries. Under the common social forestry model, 45% of timber sales were (and still are) passed to beneficiaries at time of clear felling. Nishorgo began with an assumption that the social forestry model of directly retained benefits could be applied to revenue generated by PAs.

In spite of the precedent set by social forestry, across the Government of Bangladesh there is a deep-seated tenet that not a single item of value or a single Taka can be generated from Government land without it being collected and registered to the central government. The policy has its origins in the 1972 Constitution itself[5] and was referred to regularly by senior officials as a reason that communities could never retain PA entry fees or other PA revenues.[6]

Orchids growing on trees in Lawachara National Park. The interest of FD staff in maximizing revenue from forests diverts resources from conserving such natural wonders. [Philip J. DeCosse]

This underlying understanding of Government policy created roadblocks to co-management repeatedly, not just for the proposed sharing of 50% of PA entry fees with communities (that took four years to be approved, and even then with many conditions), but equally importantly for proposals to share smaller benefit streams. At one point early in 2005, the FD Project Director of Nishorgo proposed that community patrol groups should have the right to sell tea and biscuits at PA entry areas. Other FD officers raised numerous objections to the legitimacy of these operations taking place on PA lands. Later, when grant funds were to be used to construct more permanent kiosks – again to service the increasing numbers of visitors with benefits going to community patrollers – objections were raised within the Department, again on the grounds that no revenue could be generated on Government land without a written policy allowing it and without all the revenue being booked first to the Central Treasury.[7]

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[5]   Article 84 from the November 1972 Constitution of the People's Republic of Bangladesh includes this: "Consolidated Fund and the Public Account of the Republic: (1) All revenues received by the Government, all loans raised by the Government, and all moneys received by it in repayment of any loan, shall form part of one fund to be known as the Consolidated Fund. (2) All other public moneys received by or on behalf of the Government shall be credited to the Public Account of the Republic."

[6]   One critical reference to this clause was made in a 2008 meeting on PA entry fee benefits sharing with the Joint Secretary, Ministry of Finance. Again referring to this language from the Constitution, the Joint Secretary argued that – strictly speaking – the Social Forestry Rules and practices allowing benefits sharing should be declared unconstitutional.

[7]   As Nishorgo worked in 2007 to obtain approval to have 50% of PA entry fees retained directly by co-management organizations (CMO) at the point of transaction, one project staff member consulted with the then-Country Representative of the World Bank to Bangladesh. She stated at the time that Bangladesh's financial system was the most centralized that she had ever experienced. The Bank was working with the Ministry of Health at the time to allow a portion of paid hospital fees to be retained at the hospitals without being forwarded to Dhaka's Treasury office, and this effort had not yet succeeded (Personal communication: Christine Wallach).

There are valid historical reasons for the Government to centralize revenue collection, but holding firm to this policy while at the same time promoting co-management has slowed the creation of new conservation incentives, and remains a fundamental challenge in continuing to extend incentives as Nishorgo's work continues.

(8) Forest management oriented to maximize revenue

In April of each of the years that the Nishorgo project was active (2003-2008), a dialogue would ensue between the senior staff of the Forest Department and of the Ministry of Finance concerning the amount of revenue the Forest Department could expect to generate in the subsequent budget year (the Bangladesh financial year runs from July 1st through June 30th).

In the five years from 2002-2007, the revenue generated by the Department hovered at around 100 crore Taka per year, or just under USD 15m, with an increasing portion of this coming from social forestry, and much of the remainder coming from revenues from timber sales. This compares with the Department's annual costs of only USD 1.7m. At a point between April and June, a revenue target would be set for the Department, and the Department was expected to meet that target. Responsibility for meeting the annual target was divided among administrative divisions within the Department. From the Ministry of Finance point of view, the Forest Department has been considered as a revenue-generating Department for years. Indeed, the Department's central purpose in the colonial period was the generation of revenue from forestry.

As a result of this revenue generation focus, FD officers, including those at the PAs, are driven to some degree by the need to generate enough revenue to meet annual targets. New Government projects proposed within the Department have a better likelihood of being accepted by the Planning Department if they will generate additional revenue. This was a partial rationale for proposal and approval of Eco-Park projects, which were designed to generate revenue from entry fees, all of which are forwarded to the central Treasury. FD staff recognize that generation of new revenue is looked upon favorably by senior staff of the Department, not least because it assists in meeting revenue targets to which the Department is held.

(9) Limited financial resources and training for conservation interventions in PAs

This interest and attention given to revenue generation within the FD results, not surprisingly, in less time and energy being committed to the many other PA management activities that do not generate revenue. Matching the focus on revenue generation has been a concomitant under-investment in conservation and the staff training required to improve management of PAs.

Facing limited budgets and training for PA management, FD staff posted to the PAs conclude that there is little "real" work to do at those sites, where "real" work refers to forest plantation activities. Few FD staff have been trained in habitat restoration, and even less in areas of trail development, or interpretative support and interactions with CMOs or tourists. So even where resources are available for the PA, field staff generally do not know how to use those resources.

Historically, this difference in perspective about the balance of work in PAs versus other types of forests help explain why the PAs have been less well protected than other Reserve

Forests. From the field staff perspective, a Reserve Forest that has not also been protected under the Wildlife Act can still be "managed" and is thus more valuable. In a "managed" forest, FD staff can oversee plantation work and collect revenues from timber. Such activities – from the local FD staff perspective – makes them more worthy of protection than the so-called "double protected" forests (such as all the Nishorgo PAs) covered under both the Forest Act and the Wildlife Act.

Forest Guards, like those shown here in Lawachara National Park in 2004, perceive less incentive in protecting PAs than in protecting plantations. [Philip J. DeCosse]

Even after training through the Nishorgo approach, FD staff managing PAs still do not have a sufficiently clear understanding of what work is to be done within a PA, nor do they have sufficient resources within the PA budgets to carry out appropriate conservation management activities, nor would they get any recognition if they did take such actions.

(10) Forest Department traditions of education, discipline, social status and conservatism.

In order to understand the context in which Forest Department staff function on a day to day basis, one must also recognize that this is a department with a history that goes back more than 125 years. Some of the earliest forest management plans were completed in Bangladesh's forests by the colonial period Forest Department and are now housed at Oxford University. A history of applied forest science has remained a matter of pride to FD staff members today, many of whom have two or three Master's degrees or PhDs. Before partition, foresters were trained at Dehra Dun in India, and between then and the Liberation War, many were trained in West Pakistan. Most of the senior staff of the Department today have advanced degrees from universities in Australia, the US, the UK, and South Asia.

The culture of the Department from its origins well into the 1970s was one of strict discipline, high expectations for performance and high social status. Enforced dress codes stipulated blue blazers for senior staff and distinct uniforms for all ranks of officer down to Beat Officer and Forest Guards.

Even into recent years, senior FD staff maintain high respect for scientific research, in many cases publishing articles or news on wildlife or maintaining close links with zoology departments at universities. Updating the lists of endangered species for the revised Wildlife Act, for example, was carried out through a close collaboration between senior staff of the FD and zoologists and wildlife biologists from Dhaka and Jahanginagar universities in particular.

These values of hard work, discipline and leadership earned the Department a strong and favorable reputation through the 1980s, evidenced not least by the desire of educated families to have their sons pass the Civil Service exam and enter the Department. A senior Forest Officer through these times was considered to be highly educated in his field and held considerable social status.

Some of the publicized successes of the Department have helped to maintain that reputation. The Coastal Afforestation Program that was implemented through the 1980s and 1990s has resulted in the large tracts of mangroves and casuarina trees in accreted chars and along coastal dunes. And the successes of social forestry are evident in both roadside plantations and woodlots throughout the country.

These traditions are merged at the same time with a conservatism toward change and new ideas, and particularly any changes to the forest management models which are assumed to have worked well over decades.

The traditions and history of the Department present challenges and opportunities for advancing co-management today. In spite of image setbacks in recent decades, the older traditions of the Department remain. New initiatives such as co-management need to be advanced in this historical context of the Department, building on its justifiable pride while taking account of its conservatism and resistance to change.

(11) Changes in trends and financing of large-scale forest projects.

At the time Nishorgo began in 2003, the Forest Department had benefited from 25 continuous years of donor-financed loans or grants (largely from the World Bank, the Asian Development Bank (ADB), United Nations Development Programme and UN Food and Agriculture Organisation (FAO)). With a few exceptions, this external support targeted increasing the production of wood and revenue from forest lands.

By 2003, only two large loan-financed projects remained in operation in the Department: the ADB-financed Forestry Sector Project (FSP), focusing principally on social forestry; and the Sundarbans Biodiversity Conservation Project (SBCP). Senior FD staff members had begun to realize that no new projects were forecast to come online. By 2005, both the FSP and the SBCP had ended. Throughout 2004 and 2005, there were no appraisal missions undertaken by the ADB, the World Bank or the FAO – the major forest-sector investors – for new forest projects.

The guest register at this historic Shyamoli guest house in Lawachara National Park includes entries by dignitaries going back to the early 1950s. It is evidence of the long history of the Forest Department in the PA. [Philip J. DeCosse]

Within the Forest Department, the message had slowly taken hold that the well-financed days of the past were coming to an end, with a number of key implications for the Department's operations. One implication was the increased emphasis put on direct Government-financed projects rather than bilateral or multi-lateral projects. Government financed projects within the FD typically allocate funds either for plantation development or infrastructure construction (e.g., buildings, roads, bridges). Government funded FD projects have been "small" (between USD 300,000 and USD 1.5m) by contrast with

the multi-lateral donor projects (the two most recent from ADB were well over USD 50m). The Government-financed FD projects have taken approaches largely inappropriate to conservation of PAs and are subject to little external scrutiny. They have targeted either forest plantations of species considered "productive" (e.g., agar, bamboo, rattan, acacia) or construction of visitor or tourist facilities, such as in the range of Eco-Park projects financed with these resources.

Apart from spurring a shift toward smaller GOB projects, the closing of the FSP and the SBCP also provided an important opening for co-management, and for the Nishorgo project in particular. As those projects and their financing wound down, FD staff showed a greater interest in and openness to the co-management experiment of Nishorgo, not only because it was one of the few significant bilateral operations going on at the Department, but also because it offered a potential growth area of activities within the Department itself in PA management.

Nishorgo's first Project Director at the Forest Department noted in 2004 that if the FD were to succeed in establishing a successful co-management model for PA conservation, it would attract the attention of other major investors/donors in future years, and in this sense provide a new growth area within the Department.[8]

(12) The evolving public image of the Forest Department.

In the late 1990s and early 2000s, the respected traditions and status of the FD were colored by a number of incidents that clouded its reputation. Stories increased of the number of FD officers – sometimes in league with those with political connections or with other civil servants – reaping illicit benefits from the forests. An increasing number of stories appeared in the major newspapers about illegal felling in forest areas. At the same time, an awakening was taking place of the public's interest in conservation.

Records of the public consultations from the Biodiversity Strategy and Action Plan process in 2003 showed a new aggressiveness in openly criticizing the Department. During those proceedings, it was commonly and openly stated that the management of biodiversity in Protected Areas should be taken away from the Forest Department and placed under a new department for wildlife or biodiversity conservation. A similar deterioration in the image of the FD became evident in a Ministry of Environment and Forests-drafted "Wildlife Policy" in 2005, which proposed creation of a "Department of Wildlife Conservation" for all biodiversity management, implying that all PAs would be shifted out of the FD and into this new Department. The draft policy was not approved, but the forthrightness by which it attempted to exclude the Forest Department from PA management would have been difficult to imagine only a decade earlier. In addition, the multiple accusations of corruption made of senior FD staff during the period of the Interim Government in 2008 further damaged the image of the Department.

These external criticisms of the Department were not unrelated to the evolving internal image of the Department among its own staff. At one point in 2007, the Chief Conservator of Forests (CCF) – in a discussion of entry fee collection at Nishorgo sites – noted that such

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[8]   By 2009, some evidence of the accuracy of the Project Director's predictions were coming true. GTZ has formalized a new project in support of co-management at one Nishorgo area. Other major donors, including the European Union, expressed interest in supporting a participatory management model for the Sundarbans.

collection should be done by a private company, since "the FD staff could not be trusted to do it honestly".

The first Project Director of Nishorgo at the FD had argued that the co-management approach, with its attendant characteristics of openness, transparency and support to local populations – might offer a welcome contrast within the Department to the criticism staff had received. Subsequently, the second Project Director and Khan et al (2008) noted that local FD staff have been increasingly allying themselves with the CMOs at Nishorgo sites in a way that helps to protect them from open criticism against the Department.

This evolving public image of the Department is an important factor in understanding the outlook of FD officers, and helps to explain their willingness to accept the participatory models implicit in co-management.

Factors Affecting the Full Range of Co-Management Stakeholders

(13) The precarious situation of minority indigenous groups.

The historic, cultural and legal relationship of minority and indigenous peoples to the forests of Bangladesh remains a focus of a debate carried on in newspapers, televised discussion forums and university campuses throughout the country. The central–and most sensitive–issue is the question of what rights indigenous peoples have to forests under statutory management of the Forest Department. Within the Department, this discussion often focuses on the length of time that a particular indigenous group has been present in a given forest area, and, by consequence, that group's legitimacy (or otherwise) in claiming any rights to the area in which they have lived.

As is often the case with sensitive subjects, the semantics of this discussion are telling. FD staff rarely use the term "indigenous" or the term "Adivasi" (literally, "first people") when describing those groups that have lived in forest areas. They hesitate to use those words on the grounds that many such peoples were brought to the forest areas as laborers deliberately by the FD only two or three generations ago, even as late as the 1960s. But the presence of indigenous peoples in the forest areas of Bangladesh goes back hundreds of years, and certainly so in the case of the Hill Tracts and Modhupur, to name two areas. Even where minority peoples have moved into forest areas more recently, they have been the first to settle in what were at the time of their arrival remote and uninhabited forest "jungle".

The Department faces a major conundrum here. FD staff perceive "protection of the forests" of the country as one of their most important roles. The Department is very aware that giving any ground on the issue of land rights within the forest areas could lead to claims made throughout the entire forest system, not only by indigenous peoples, but by others as well. So the Department tends to take a hard line and not broach any discussion at all of land rights – or any other rights–for the indigenous peoples within the forest areas.

Avoiding land right claims gives a basis for maintaining distance from indigenous peoples, but is strengthened by a pervasive ethnic bias against them, a bias evident not just in the Department, but in the broader social context. The bias is evident in both subtle and overt

ways, most notably during interactions between Bengali staff and the indigenous peoples themselves. The depth of this cultural bias is such that it cannot be openly discussed, at least not in the context of a formal meeting such as those of the CMOs.

Within the CMO meetings at Nishorgo sites, indigenous individuals and groups do not receive the same treatment from other CMO members as do other people of Bengali origin. Many CMO meetings have included open criticism of indigenous peoples as a group, while more specific instances of bias have been evident in – for example – allocation of social forestry Benefits Sharing Agreements to non-indigenous peoples, even where indigenous people have legitimately resided in PA core zones and taken active roles in forest patrolling and protection. At both Lawachara NP and Rema-Kalenga WS, these lucrative Benefits Sharing Agreements went first to non-indigenous people, although the indigenous communities had directly taken on the role of protection through patrolling. This treatment of indigenous peoples puts them in a precarious position in the overall co-management process.

Although the biases described above do exist, the CMO structure has provided a forum – which did not exist earlier – in which grievances of minority and indigenous groups can be aired and possibly resolved at the PA site itself, without recourse to regional or national fora in which such issues can easily become politicized. The current and future evolution of collaborative management cannot be understood outside the context of the cultural and ethnic biases and perceptions of its participants, whether in the FD or in the CMOs.

(14) A unique confluence of poverty and high population density.

Other than a number of island states and urbanized enclave countries, Bangladesh is the most densely populated country in the world.[9] The number of people per square kilometer in Banglad0

esh is more than three times that of Japan, Sri Lanka or El Salvador, five times that of the UK, Pakistan or Nepal, and 33 times that of Madagascar. The idea of "getting away into nature" in Bangladesh is only possible on a boat in the most remote edges of the Sundarbans Wildlife Sanctuaries. Even there, one does not go long before seeing a honey collector or a fisher. Elsewhere in Bangladesh, there literally is not a single forest that can be visited without finding someone in or passing through it.

The challenge of conserving forests and biodiversity in such a densely populated country is exacerbated by the pressures of poverty. Although by most estimates Bangladesh has witnessed a modest poverty reduction rate of around one percentage point a year since the early 1990s, poverty levels remain high. Two alternative estimates based on the Household Income and Expenditure Surveys (HIES) of the Bangladesh Bureau of Statistics show rural poverty levels declining from 58.7 percent in 1991/92 to 43.8 percent in 2005 (GOB, 2008). However, in spite of such progress, poverty levels remain high. Measured by food intake, the "extremely poor" (consuming less than 1,805 calories per day) totaled 23 percent of the national population,

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[9] On a population per hectare basis, only these countries are more densely populated than Bangladesh (noted in order starting with the most densely populated): Monaco; Singapore; Vatican City; Malta; and, Bermuda. World Resources Institute. 2007. EarthTrends: Environmental Information. Available at http://earthtrends.wri.org. Washington DC: World Resources Institute.

while the "absolute poor" (less than 2,122 calories per day) accounted for 49 percent of the population in 2000.

These high levels of poverty are associated with pressure on forest and other natural resources. Most noticeably at Nishorgo sites, tens of thousands of neighboring poor use the Protected Areas as a source of fuel wood. Every morning at Lawachara and Satchuri National Parks, a stream of poor women from neighboring villages and the nearby tea estates leave the PAs with fuel wood on their heads either for the long walk back to their homes, or to sell the wood to middlemen who await them at points just outside the Park. The same scene repeats itself at all the PAs around the country. Available natural resources, and particularly woody biomass, in the PAs are harvested wherever possible to meet the needs of those living nearby.

(15) Competing pressures from commercial extraction versus local household use.

This poverty, and images of the poor surviving in part on the extraction of woody biomass from forests, has provided a dominant backdrop for forest PA conservation programs such as Nishorgo. Nishorgo was designed to identify livelihood opportunities for those local stakeholders who heretofore had been extracting wood from the forests. Certainly, without direct engagement of such poor, the approach would not have progressed very far. However, this same focus on the poor households directly involved in forest extraction has in effect diverted attention and resources from the more intractable pressures of a commercial economy desperately in need of forest products.

Bangladesh's per capita GDP grew at 3.4 percent per year during 2004-2007, and the overall GDP growth rate in the same period was 5.4 percent.[10] Along with this growth there has been a constant increase in fuel wood demand and sales, and also an increased demand for teak and other hardwoods for furniture, boat-building and construction.

Observation from Nishorgo sites, and a number of studies undertaken on the fuel wood markets (especially Sultana 2007) have revealed that in PAs commercial extraction of fuel wood for sale exceeds in importance the amounts used by neighboring households themselves. At all the major northern pilot PAs (where per capita woody biomass levels are higher than in the south), trucks congregate at pre-determined points around the PA and then leave to sell their collected fuelwood at markets such as Comilla, Chittagong and Dhaka. From the small (243 hectare) Satchuri National Park, an estimated 2 tons of fuel wood is extracted every day, mostly by individuals who sell to traders operating trucks at collection points around the forest (Sultana, 2007: 110).

These high levels of commercial fuel wood extraction are driven by urban domestic cooking energy use patterns that rely more upon fuel wood than other energy sources. It is only in the two major cities of Dhaka and Chittagong where a significant number of households use gas (piped or bottled) for cooking. The fuel wood needs of millions of urban consumers need to be met, and the forest PAs provide a prime supply opportunity for businessmen, who pay local collectors to extract for them.

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[10] World Resources Institute. 2007. EarthTrends: Environmental Information. Available at http://earthtrends.wri.org. Washington DC: World Resources Institute.

The pressure on forests from commercial logging cartels is equally intense. According to the Forest Department's own register of illegal felling (generally an understatement of the real situation), the average annual number of trees illegally felled in Lawachara National Park in 1999 and 2000 was only 44. In 2004 and 2005, however, in this small Park of only 1250 hectares, the average number of trees illegally felled had risen by twenty seven times to an annual average of 1,188 (the illegal felling slowed rapidly after 2005, as community patrols began to be effective). The increased pressure on Lawachara and Rema Kalenga coincided with and was furthered by a gradual depletion of the available teak from other Reserve Forests in the Sylhet region, making the hardwoods remaining in the forest PAs increasingly valuable. The housing boom in Dhaka and Chittagong over the past decade, for which teak and other hardwoods are widely used, has exerted continued upward pressure on demand and prices.

The economy is also making intense demands on Protected Areas for fuel wood to fire brick making needed in this construction boom. Bricks are the primary building material in Bangladesh, and these are produced at thousands of brick kilns located throughout the country, many located in or near forest Protected Areas precisely so that they can take advantage of fuel wood as a primary energy source. Although both the Forest Act of 1927 and the Brick Burning Control Act explicitly prohibit the establishment or operation of brick fields in or within two kilometers of any Reserve Forest, these rules are often violated. In 2006, the Chunati Wildlife Sanctuary south of Chittagong had four brick fields operating within the actual boundaries of the Sanctuary, and another six located within a 2 km radius.

Understanding this critical factor – the scale and demands of a growing market economy on the forest PAs – has been central to adapting co-management under Nishorgo. Meeting the livelihood needs of local stakeholders was no less important than had been conceived at the beginning, but it became increasingly clear that such livelihood activities were only a beginning, or an entry point, to a larger challenge: mobilizing a subset of local stakeholders to break the commercial demands being placed on the forest PAs. This second challenge was inherently more confrontational, and more focused on power relations, than the initial focus on community-level collaborative management.

(16) The dramatic scale and speed of resource extraction.

Just how rapidly forests can disappear in Bangladesh – even when so few remain – is of an alacrity that would be shocking in many parts of the world. The loss of closed canopy forest at Chunati Wildlife Sanctuary is one of the best known examples of the pace at which forests can be transformed through extraction. Chunati was declared a Wildlife Sanctuary in 1988. There had not been extensive consultations with the people of the area prior to this declaration. Fears within neighboring communities about lost access to fuelwood or lowland rice growing in the Sanctuary were fueled by commercial interests that recognized the enormous riches offered by the closed canopy hardwood forest in the 7,700 hectares. The forest at that time was dominated by Garjan, a tree favored by boat-builders in nearby Chittagong. Within the short space of two years, the entire 7,700 hectares had been cleared, with only small patches of mature trees remaining. By 2003, when the Nishorgo project started, Chunati was largely covered in sungrass, with some scattered trees remaining.

A similar process of rapid forest loss occurred in the wake of the 1991 cyclone at Teknaf, after which the Government declared that fallen timber could be legally removed. With the door open to enter the forest for clearing of fallen timber, another dramatic process of forest destruction ensued, after which the entire middle portion of the Game Reserve was largely denuded. In the years just prior to Nishorgo's launch, the pace of forest loss in the northern portion of Teknaf Wildlife Sanctuary met a similar fate, this time driven by the commercial demands for timber, and aided by the installation of brick fields to the north and east of the forest blocks. A remote sensing analysis conducted by the Nishorgo team showed that within an eight year period, 42 percent of "high" and "low" forest cover areas were converted to grasslands or agriculture.

Recognition of the risk of extremely rapid and organized forest loss informed the decision by the Government in 2007, after Cyclone Sidr passed through the Sundarbans, to prohibit any collection of deadwood within the Sanctuary boundaries. The Government at the time faced pressure from timber merchants in Khulna to allow them to enter the area to collect the "useless dead wood". Had they succumbed to that pressure, it is likely that the eastern portions of the Sundarbans East Wildlife Sanctuary would now also be deforested.

The risk of such rapid, dramatic illicit felling of entire forests provides a contextual factor that informs the decisions of many involved with co-management, and particularly the Forest Department. Senior staff at the FD have seen how rapidly entire forests can disappear, and so are hesitant to take any risks that might allow such processes to be unleashed again.

(17) Protected Areas as domestic tourism destinations.

The Bangladesh Parjatan (tourism) Corporation organized a campaign to attract foreign tourists in the 1990s with the slogan "Come to Bangladesh before the Tourists Do". Although the number of foreign tourists to nature areas has increased, that slow growth has been dwarfed by growth in internal domestic tourism, including tourism to natural areas.

The best evidence of rapid increases in domestic tourism has been at Cox's Bazar, situated at the northernmost point of what is referred to in Bangladeshi tourist brochures as "the longest unbroken beach in the world". On a given weekend between November and February, the town now receives more than 100,000 visitors, where in the early 1990s the town was still tiny, including only two government run hotels and a smattering of smaller hotels.

View from the Teknaf Wildlife Sanctuary out to the Bay of Bengal and its beaches. Domestic tourism has driven rapid growth of nearby Cox's Bazar, and these visitors are eager to find nature outings. [Philip J. DeCosse]

Beach and forest-related tourism at Cox Bazar is only the most well-known of the nature tourism outlets. Weekend bus outings to nature areas for families, schools and companies have become increasingly common as income has increased and

people become aware of available nature destinations. Private nature "picnic sites" have sprung up around the country to meet this need, with the services offered generally limited to cooking or food service facilities, garbage dumpsters, merry-go-rounds and sometimes boating.

The Forest Department recognized this trend and capitalized on it by creating several mass-market nature tourism destination sites called Eco-Parks and Safari Parks. Examples include the Banshkali Eco-Park in Chunati Wildlife Sanctuary, the Dulhazara Safari Park (alternatively known as the Bangabhandu Safari Park), and the Sitakunda Eco-Park just north of Chittagong. The number of visitors to these nature areas continues to rise every year. By 2008, for example, the small 75 hectare Dulhazara Safari Park was receiving more than 20,000 paying visitors in a single day. Sitakunda Eco-Park received more than 50,000 paying visitors in a single holiday weekend. Recognizing the attraction of these nature visit opportunities to the local poor and middle class, the Forest Department has continued proposing new venues for Government-financed projects.[11]

This rapid growth in domestic nature-related tourism has had an important influence at Nishorgo sites. Visitation rates at Nishorgo sites increased dramatically as soon as communication efforts began to make it known that basic nature tourist facilities (guides, trails, facilities) were available at these sites. Lawachara National Park has been the most directly targeted, and by 2005 weekend traffic jams of tourist buses had become commonplace, with the consequent problems of litter, loud noise and eating inside the PA.

With even a moderate success in protecting forests and putting in place tourist facilities, the more accessible forest PAs in Bangladesh will rapidly receive a dramatic increase in numbers of nature tourist visits. This trend in domestic tourism represents both an opportunity (in particular for generating entry fee revenue for local communities) as well as a risk (for its negative impacts on biodiversity and ecosystems).

(18) Powerful cultural roots of a conservation ethic.

It is a seeming contradiction that the political and economic system in Bangladesh can have allowed such rapid forest destruction while the cultures of Bengalis and other ethnic groups of Bangladesh place such high value on nature's beauty. Themes and images of nature's beauty are woven throughout Tagore's songs and poetry, including the national anthem. Tagore's school, Shantiniketan, was among the first academic institutions in the world to experiment with the use of nature as an academic setting and a source of learning opportunities. Bengali poets, novelists and painters since Tagore's time have not slowed in crafting images of natural beauty that themselves speak of a cultural affinity with nature. The close association of nature, culture and the divine in minority and indigenous ethnic traditions within Bangladesh has also been noted widely (Bitu 2008; Hossain and DeCosse 2009).

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[11] The term "Eco-Park" now has a negative connotation in the press, not least because of arguments made that the Forest Department had attempted to create an Eco-Park at Modhupur. In fact, that Government project there was not called an Eco-Park by the FD, but the term has nonetheless stuck. The problems encountered at Modhupur National Park were less associated with any confusion over an Eco-Park or National Park than they were with other longer term conflicts associated with land rights and ethnic issues. Similar conflicts arose around the Madhabkunda Eco-Park in Sylhet.

This cultural affinity with nature provides an opportunity to engage a broad cross-section of the population as allies in a conservation movement. During Nishorgo, evidence of this energy and commitment was clear in such outreach activities as those conducted with the young men and women in the Scouts of Bangladesh who, like many of their compatriots, were extraordinarily enthusiastic about conservation and ready to contribute to its success. Conservation efforts can enhance the likelihood of success by taking advantage of this energy and commitment.

Conclusion

The central aim of this chapter has been to offer an understanding of those factors that framed the co-management process and decisions supported by Nishorgo, but that were not fully apparent in 2003 as Nishorgo began. To this end, 18 "factors" have been identified, with six each affecting the neighboring communities, the Forest Department and the full range of stakeholders. A careful understanding of these 18 factors will provide a stronger foundation for anyone aiming to undertake forest PA conservation in Bangladesh in the future.

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27
Conclusions and Reflections on a Way Forward

Philip J. DeCosse, Ishtiaq U. Ahmad, Paul M. Thompson, Azharul H. Mazumder and Ram A. Sharma

> *Elinor Ostrom has challenged the conventional wisdom that common property is poorly managed and should be either regulated by central authorities or privatized. Based on numerous studies of user-managed fish stocks, pastures, woods, lakes, and groundwater basins, Ostrom concludes that the outcomes are, more often than not, better than predicted by standard theories. She observes that resource users frequently develop sophisticated mechanisms for decision-making and rule enforcement to handle conflicts of interest, and she characterizes the rules that promote successful outcomes.*
>
> From the Nobel Prize Committee Announcement Awarding the 2010 Nobel Prize in Economic Sciences to Elinor Ostrom

The 2010 Nobel Prize award to Elinor Ostrom recognized not just her work, but the field of governance of commons that she did so much to advance. The central challenge of Nishorgo was one of establishing new institutions for the management of commons – the same set of issues that have driven Ostrom's work. Access and use rights in the five state-property Nishorgo pilot sites were on paper governed by a complex set of social and legal rules, but to the casual observer in the 1990s these forests were in effect open access resources, without rules. By 2002, it had become clear that those rules were not working, at least in favor of solutions that allowed the resources (in this case forests within Protected Areas – PAs) to survive. So the single central and primary challenge of Nishorgo was to understand the existing institutions, including rules and norms, governing PAs and then find a solution that would enable fundamental changes in the governance system – including decision making, rights, informal rules, and formal institutions – that would sustain the natural resource base through a different social, political, and economic construct.

This closing chapter attempts to highlight the most salient conclusions and lessons that have emerged from the Nishorgo effort to change governance of forest PAs since it began in 2003. Because this book was framed from the outset by the relevance of Bangladesh's PA management challenge for other countries, that global and – specifically – South Asian PA context for Nishorgo's work is included in the opening section. The chapter then turns to four broad thematic areas under which key lessons and conclusions are identified: (1) the authority and roles of co-management organizations (CMO); (2) processes for capturing economic value generated by PA lands; (3) necessary internal changes to the Forest Department (FD), and; (4) supporting issues and approaches. From within these thematic areas, 25 recommendations (see box) are identified that outline a priority roadmap for continued improvements to the conservation and sustainable management of Bangladesh's PA system.

Summary Recommendations for Improving Forest Protected Area (PA) Management

The Authority and Roles of Co-Management Organizations (CMO)

1. *Clarify and Further Codify Complementary Roles of the CMO and the Forest Department, Especially for Enforcement*
2. *The CMO Need to Play More Active and Leading Role in Coordinating Inputs and Resolving Conflicts Across the PA Landscape*
3. *Allow for a Greater Degree of Site-Specific Governing Solutions within the Co-Management Regulatory Framework*
4. *Assist in Creation of National Organization to Support PA Co-Managers*
5. *CMO Need to Prepare their Own Business Plans and Sustainability Plans*
6. *Secure Direct Financing for Community Patrol Group (CPG)*

Capturing Economic Value from Forest Department Lands

7. *Simplify Entry Fee-Sharing Process, Adjust Entry Fee Levels, and Allow Cross-Financing*
8. *Understand and Address the Political Economy Behind PA Entry Fee Auctions*
9. *Expand CMO-Led and Financed Social Forestry in Buffer Areas*
10. *Allow Participatory Enrichment and Re-vegetation Plantations in PA "Core Zones" as Part of Ecosystem Restoration*
11. *Consider Allowing CMO – and Community Patrol Groups (CPGs) in Particular – to Benefit Directly and Monetarily from Success in Halting Illegal Felling*
12. *Continue Exploring Means of Expanding Carbon Financing Projects*
13. *Prepare a Legal Framework Formally Allowing CMO to Benefit from Tourism-Related Economic Opportunities on PA Lands*
14. *Set a New Vision and Policy for Revenue Capture and Sharing from PA Lands*

Institutional Changes within the Forest Department

15. *Recognize and Accept Co-Management Organizations as the Principal PA Management Partner of the FD*
16. *Educate and Re-Orient Staff about the Department's Primary Role as Service Provider Rather than Revenue Generator*
17. *Create a "Protected Areas and Biodiversity Management" Wing at Forest Department*
18. *Develop Capacity Development and Training Program for PA Managers Across All Levels of the FD*
19. *Establish and Maintain Common Standards Across All PA through Centralized FD Skills and Leadership*
20. *Explore New Modalities for Obtaining Feedback from the Public for PA Decisions and Plans*
21. *Meet 2004 Forest Policy Targets for new PAs totaling 152,000 hectares, and do so through Declaration of PA within Larger Multiple Use Reserve Forests*

Supporting Issues and Approaches

22. *Facilitate, Finance, and Encourage a Private Foundation Dedicated Primarily to the Protected Area System*
23. *Co-Management Organizations Should Target the "Marginalized" Rather than the "Poor"*
24. *The FD and Researchers Need to Develop Knowledge Management Priorities and Strategies for the PA System*
25. *Extend Efforts to Develop a Unified and Widely Recognized "Brand" for a National Network of Protected Areas*

Participatory PA Co-Management in Bangladesh in an Evolving National, Regional and Global Context

The prevailing understanding of conservation 30 years ago in Bangladesh was a relatively simple one compared to today. The Forest Department was assumed to be owner, manager, and authority for all that occurred within the PA boundaries. Papers prepared for the 1984 "First International Seminar Cum Workshop for the Conservation of Wildlife in Bangladesh" (German Cultural Institute, 1986) convey the tone at the time. The authors of the 20 papers in that volume scarcely mention those living already within the boundaries of Protected Areas, and no consideration is given by any of the authors to formal processes for resolving conflicts over the PA. Rather, the collection of papers focuses almost exclusively on wildlife status reports and a set of silvicultural and zoological priorities for conservation.

One participant in that workshop, however, presciently recognized the social and political challenges that were already occurring, and would worsen. The then-Deputy Conservator of Forests, wrote about the "frequent occurrence of entrepreneurial encroachment where wealthy persons use landless people as an instrument in encroachment" and cited the often "powerful patronage in the background." And he recognized that it occurred commonly that "politicians make populistic and alluring approaches by telling people to start to settle in the forest land and that they will provide wherever required necessary protection in return of votes." In making these observations, he summarized the complex governance challenge in which "the local politicians and the rural elites are using the landless as an instrument or tool to (a) earn money and (b) to acquire land in the long run" (Howlader: 1984).

PA management has evolved steadily in recent decades, with a greater emphasis placed upon collaboration, transparency and benefits sharing with neighboring populations. This group of women in West Bengal State of India explain their involvement in PA management. [Utpal Dutta]

In spite of the foresight of this one senior FD staff member at the time, no changes were made in Bangladesh's PA management rules and practices that would address the social and political conflicts over common property rights until much later in 2003, when the FD initiated the Nishorgo project.

Other countries have developed their framework for participatory PA management at a pace quite different from that of Bangladesh. Deardon et al (2005) reviewed the evolution in PA management across 41 countries from around the world from the period 1992 through 2002. During that 10-year period coinciding with the lead-up to Nishorgo, he identified "overall trends toward increased participation of more stakeholders, greater use of formal accountability mechanisms, and a wider range of participatory techniques," with 75% of the countries stating that legislative improvements had been undertaken in the period. In 1992, governments were

understood to be the "sole decision-making authority" in 42% of the responding agencies. By 2002, that number had fallen to only 12%, with many co-management structures emerging.

Deardon et al also reported an increased level of private sector involvement in PA management, particularly in the development of tourism opportunities. They also reported an increased proportion of countries publishing annual State of the Protected Areas reviews and undergoing external audits, both important measures of transparency and accountability. Global trends in managing PA entry fees also changed rapidly during this period. In 1992, nearly 100% of countries surveyed sent collected PA entry fees to the central treasury, while by 2002 46% of the surveyed agencies had received authority to either directly retain PA receipts or allocate a pre-determined portion to communities.

In this same decade preceding Nishorgo's initiation, other South Asian countries also improved their participatory PA management frameworks relatively more rapidly than Bangladesh. In reviews of PA management in South Asia (Sharma and Yonzon, 2002; Kothari et al, 1998; Kothari, 2003), Bangladesh is characterized by a relatively greater degree of state control, limited recognition of the roles and rights of local populations, and a context in which indigenous and local populations had no formal role in or benefits from PA management.

Between 2003 and 2009, participatory PA rules, practices and standards changed considerably in Bangladesh. Formal co-management organizations were created and recognized under regulatory instruments. Rules allowing the retention of PA entry fees by co-management organizations and communities were being implemented. Income-generating investments both inside and surrounding PAs were taking place and generating benefits for PA co-management participants. And scientific evidence at co-managed forest PA sites showed that biodiversity was increasing as pressures on core areas were slowed.

Identifying Lessons, Conclusions and Recommendations for a Way Forward

The progress in PA co-management of recent years in Bangladesh should not belie the significant opportunities for further improvement. In the remainder of this chapter, seven priority thematic areas are reviewed. While some limited progress may be noted, the primary emphasis of the chapter is the identification of critical next steps based on the lessons learned and articulated throughout this book.

This book is not the first attempt to draw lessons learned and recommendations from the Nishorgo project. In late 2008, as the field work of the Nishorgo project drew to a close (and a follow-on project got under way), those staff members that had been directly involved in day-to-day implementation identified a set of 10 priority recommendations for impro-ving the implementation of the PA co-management process (see box at next page). Those "operational" recommendations were directed to the teams implementing co-management at the field level. They were informed also by the inputs of other Nishorgo project reviews, such as Alam and Momen (2008).

By contrast with these more field-focused operational recommendations, the conclusions and recommendations identified throughout the remainder of the chapter aim to be broader

and more strategic. And they aim to help in setting an agenda for change and improvement that goes beyond the PAs and communities for whom these operational recommendations were intended.

The Authority and Roles of Co-Management Organizations (CMO)

Co-management organizations have become established and begun to take hold at Nishorgo pilot sites. They are increasingly recognized by the Forest Department, local government bodies and neighboring PA stakeholders as a governing body that must be engaged in decisions concerning the PA. In spite of progress in this regard, the CMO are not yet the nucleus and starting point for decision-making about the PAs. Forest Department staff have not yet systematically recognized or accepted the central role that CMO can and should play in ensuring conservation of PAs. Even community members themselves do not yet fully believe in the importance of the CMO for PA conservation.

Ten Priority Operational Recommendations from the December, 2008 Workshop Closing the Nishorgo Project

#1: The primary work of the entire project team needs to organize around active, challenging, dynamic and conflictual governance of PA by co-managers. Co-Management Organizations need now to stand up, demand their rights and take action.

#2: Any revenue from forest lands must be directed as remuneration to those that are directly protecting the forest.

#3: Seize opportunities for generating revenue from Forest Land.

#4: Take formal steps to restructure/reorganize the FD around PA landscapes.

#5: Mobilize groups of the poor and marginalized to develop their own voice, issues and demands.

#6: Co-managers need to understand the expected roles and responsibilities of FD staff and hold them to it.

#7: FD at multiple levels must be actively a part of CMOs, both formally and informally.

#8: Build on the alternative income generation activities already established and expand through value chain approaches.

#9: All PA-specific activities should be executed through and with CMOs.

#10: Training opportunities in conservation management need to be expanded to both FD and co-managers.

A number of lessons and recommendations have emerged that would help in more firmly clarifying and establishing the roles and authorities of the CMO around forest PAs.

1. *Clarify and Further Codify Complementary Roles of the CMO and the Forest Department, Especially for Enforcement*

Since their creation, the roles and responsibilities of CMO have gradually become clearer and more distinguishable from the roles of the FD staff team at a given PA. In accordance with the Government Orders (GO) establishing the CMO, the FD staff members in charge of a Forest Range serve as Member Secretaries of the CMO, and so it seems plausible to think of the FD and the CMO as integrated entities at the PA level. But such is generally not yet the case. Often, FD staff members speak of the CMO as though the FD was not represented there, and the other CMO members speak of the FD as a separate and external organization.

The roles of CMO were initially articulated in the first co-management Government Order, and have been further refined through the second GO for co-management, and through a number

of guidelines for specific activities, most notably the entry fee collection process. But a lack of clarity remains about those actions for which the FD as an institution should take primary responsibility and those that should be led by the CMO as a whole, or by the non-FD members of the CMO.

The lack of clarity about roles for these important processes can have serious repercussions at PA level, with both FD staff and CMO leaders pointing their fingers at the other as the cause of poor management of tourists, patrolling, infrastructure maintenance, and forest management. The confusion about roles is exacerbated by a desire – from both the

In the moist tropical environment, infrastructure within the PA -- such as this raised trail at Teknaf Game Reserve -- require regular maintenance. Responsibilities between FD staff and CMO for activities such as this are not yet sufficiently clear. [Philip J. DeCosse]

FD and the CMO – to make a clear distinction between their respective roles: the CMO (in which many FD staff perceive little or no attachment) and the PA-level FD staff itself, with its own government budgets and processes. Hence the attitudes and understanding of the co-management stakeholders tend to separate out government and civil society roles in PA management. And yet these stakeholders must work together closely if conservation is to succeed. The CMO were expected to be the common decision-making forum that would bring FD and local people together, and that common decision-making has happened in some cases when FD staff members have been open to it, but it has not been the norm.

The best example of this necessity for collaboration and coordination is evident for forest patrolling and protection. Forest protection will not succeed if it is only executed by the FD guards – that much had been demonstrated during the years leading up to the Nishorgo pilot. Without some complementary community patrol and broad community support, the pressure on the forest will remain greater than anything the FD can control. And yet new Community Patrol Groups do not have the formal authority to apprehend suspected thieves, or seize stolen materials. Those powers rest with FD staff, per the Wildlife Act and Forest Act, and other legal instruments. If patrolling is to be successful, the CMO and FD must work together more closely, but with the responsibilities of each clearly defined. These roles have been clarified to a degree during the Nishorgo pilot (e.g., in CPG guidelines), but more and urgent work is required, and particularly with regards to enforcement. The authorities of the CMO to sanction CPG operation or to take action concerning allegations of an errant Forest Guard, are at present insufficiently clear.

The same is true in the area of tourist management. The numbers of FD are not sufficient to manage the thousands of visitors, buses, and cars that arrive at some PAs. Community members, delegated by the CMO, can assist in this process, but they have no formal authority to arrest, detain or punish tourists behaving inappropriately. It is urgent to clarify the roles of CMO-delegated individuals helping to manage tourists. And it is particularly urgent that the

enforcement authorities of CMO-delegated individuals are made clear both to the FD and to tourists themselves.

Other critical areas needing clearer distinction of roles and responsibilities between CMO and FD include the maintenance of tourist-related PA infrastructure (signboards, tourist facilities, interpretation centers) and the implementation of the forest management activities included in PA management plans and annual FD budgets (especially those that offer economic opportunities (jobs, social forestry, off take opportunities to local populations).

The challenge is not to increase the policing authority of the FD – those authorities are already sufficiently strong in the Wildlife Act and Forest Act. Rather, the FD challenge is to work with and within the CMO to delegate and empower the community co-managers with specific enforcement responsibilities.

However it is executed, the CMO must be perceived by the broader community, and local government, as having clear authorities in select areas, and particularly in the four areas identified here. This is consistent with the findings of Barrett et al (2001) in their review of conservation management, who noted that conservation organizations at PA level need in particular to have the "authority, ability and willingness to restrict access and use."

Efforts to codify roles and responsibilities is indeed an urgent priority, but it must be noted that the legalistic and technical process of distinguishing responsibilities is made far more effective when and where FD staff at PA level are fully committed to the existence and overall value of a collaborative management structure such as the CMO. During Nishorgo's pilot work, confusion about roles between FD and CMO was less where FD staff maintained good relations with CMO leaders, and worked to strengthen their capacity. Where this good will and mutual self-interest is absent, the process of distinguishing roles will take longer and be less effective.

2. *The CMO Need to Play More Active and Leading Role in Coordinating Inputs and Resolving Conflicts Across the PA Landscape*

When the CMO were initially being established under Nishorgo, the most pressing initial need was for the CMO to serve as a public and inclusive forum to hear the diverse needs of PA stakeholders. In light of that priority, relatively less attention has been paid to deliberate interaction with non-CMO institutions in the PA landscape whose active involvement could ensure improvements to the PA. The Ministry of Lands, without whose support few changes can be made at the local level, has rarely been invited by CMO to engage in PA issues. Representatives of the courts – the key institution responsible

Given the large populations of people and diversity of resources present in the immediate vicinity of the PAs, it is critical that CMOs allocate time to engage as leading organizations within their landscapes. [Sirajul Hossain]

for processing of forest theft cases – have also rarely been included in CMO meetings. The Border Guard of Bangladesh (the border patrol force) is quartered in or near all three of the northern Nishorgo pilot sites, with important impacts on these forest PAs, and yet they do also not regularly take part in CMO meetings or processes. Perhaps most importantly, the Deputy Commissioners (DCs) were rarely directly approached by CMO during the five-year initial period of Nishorgo. And yet the DCs are considered among the most important representative of the central Government within any given district of Bangladesh. The CMO need to place a greater priority on the role of coordination across public and private institutions operating in the PA landscape, ensuring in the process that resources available to the PA are delivered and that conflicts are addressed. And the CMO need to be more activist, demanding and forthright in their dialogue with public and private authorities around the PA, with the senior staff of the FD, and with interested regional and national authorities. They have not yet, but should, form delegations from individual PA, or perhaps including representatives of multiple affected PA, to visit regional or national figures, including the Chief Conservator of Forests, newspaper representatives, Ministerial officials ,and other persons of influence.

3. Allow for a Greater Degree of Site-Specific Governing Solutions within the Co-Management Regulatory Framework

When the Nishorgo effort began, co-management was entirely new to the Forest Department and to the Ministry of Environment and Forests that had to approve proposals to allow for the power-sharing co-management implied. In order to ensure passage and acceptance of these new ideas in the initial Government Order, the Nishorgo team considered it necessary to propose a one-size-fits-all approach to the co-management governing structure. At each of the five pilot PA, the structure allowed for a fixed number of CMO members from identified stakeholder groups. The second and revised Government Order has introduced some degree of flexibility.

But it is still the case that the pre-ordained CMO structure at times results in a governing body that mixes strongly associated local stakeholders (immediately adjacent villages and towns) with others that have a minimal stake in the PA.

Internationally, the World Bank has recognized the importance of allowing different contexts as forest management agreements are being designed, and the shortcomings of a one-size-fits-all approach, while recognizing also that there is "no perfect model for contracts" (World Bank 2009: 41).

In Bangladesh, providing for flexibility of governance structure at site level should remain a priority as new PA sites move under co-management. Research efforts should now focus on a review of CMO experiences to date, proposing more efficient and fairly representative governance structures. Future codification of co-management in a revised Wildlife Act or new rules should allow governance structures to be adjusted by site.

4. Assist in Creation of National Organization to Support PA Co-Managers

As Nishorgo ended, there existed no national level organization representing co-management organizations at site level. Fabricus et al (2004) argued that successful co-managers are

distinguished by an ability to create "nested institutions across scales" that can help them to achieve common goals. In order for site level PA co-management to be sustained as a model for conservation, stronger national networks of co-managers will need to evolve to support site level work.

As early as 1984, conservationists had proposed a "National Board of Nature and Wildlife Conservation Trust," which was to have had the Government bequeath it a number of PA to manage, with membership in the trust coming from conservationists, NGOs, and organizers, wealthy wildlife lovers, research scholars, and dedicated field workers (Karim, 1986). This sort of private national level organization never took hold. Newer national organizations, such as the Arannayk Foundation and the Wildlife Trust of Bangladesh, assist in national efforts to improve biodiversity conservation and forest management, but are not defined by explicit commitments to the forest PA system, nor to PA co-managers. The only national body authorized by PA regulation to engage in PA system-wide issues is the Wildlife Advisory Board, constituted under the Wildlife Act, but the Board was designed as a platform for government dialogue and decision-making, not for private organizations.

5.   CMO Need to Prepare their Own Business Plans and Sustainability Plans

At the 2005 Public Private Round Table at the Radisson Hotel in Dhaka, private business leaders had proposed that each PA should have its own business plan clarifying detailed revenue, visitor numbers, costs, and investment plans, so that private investors could better understand the business climate at each PA and understand opportunities for complementary investment in neighboring landscapes. The CMO have made many improvements in their budgeting and planning processes in the interim, and now maintain annual budgets. But, to date, those budgets do not include the detail concerning expected revenues and other variables implied by a business plan. Nor do they yet include specific plans for ensuring financial sustainability. It is this forward-looking business vision that is now required at all the PA. And, unlike current CMO budgets, business plans need to include all possible sources of revenue and costs. Fees from parking, picnic site management, eco-cottage contributions, and similarly minor receipts should all be included, as they are likely to grow in importance in coming years. And the plans should be developed in close coordination with FD staff at local and national levels. This kind of business plan will be particularly helpful as the CMO directly apply for complementary financing sources from donors or foundations.

6.   Secure Direct Financing for Community Patrol Group

No expenditure is more important to securing the legitimacy of the CMO than resources allocated for PA protection. FD staff are financed from FD budgets, but the Nishorgo pilot has demonstrated the enhanced effectiveness of protection when community members are also engaged in the process in Community Patrol Groups. As the Nishorgo pilot ended, a number of CPG were not receiving any direct remuneration, but continued patrolling – for reasons associated with social status and also in the expectation of future benefits. Remuneration levels and methods for CPG members were not consistent across all sites, nor need they be, as long as they are perceived as fair in each area.

Continued direct benefits need to be secured for those men and women protecting the PA. Here, women patrol at Lawachara National Park. [Sirajul Hossain]

New and more secure financing sources for CPG need to be identified and obtained. In-kind and in-cash benefits from social forestry in buffer area Reserve Forests, habitat restoration operations within the boundaries of the PA, and work opportunities associated with the PA need to be allocated first and foremost to the CPG members. A central "CPG Endowment Fund" should be put in place to provide support for CPG groups and members, and particularly those CPG at sites that do not generate significant entry fee receipts but which are particularly important for biodiversity conservation (e.g., Rema Kalenga Wildlife Sanctuary). This central fund should allow for financial support to those CPG members injured in the line of duty. The fund can be used to provide allowances for CPG members, although – as a fund established from government revenues – it could not provide explicitly for salaries.

Capturing Economic Value from Forest Department Lands

The Nishorgo team followed an approach that gave priority to direct over indirect incentives for conservation (see Chapter 12 on approach to creating alternative incentives). The team recognized that simply creating new livelihood opportunities for people around the PA (via the suite of "Alternative Income Generating [AIG]" options such as poultry and livestock rearing, farming and small businesses) would not create sufficiently strong direct incentives for conservation of core PA areas, not just because the marginal benefits of such new opportunities were small, but also because receiving income from those activities did not preclude recipients from doing future harm to the PA. The project would have to directly capture value from the Forest Department PA lands themselves, and would have to link receipt of those benefits to conservation. Leading opportunities for generating direct financial benefits included shared tourist entry fees, buffer area social forestry, shared off-take from forest management practices and carbon revenue. The project succeeded in improving revenue capture in each of these areas, or the prospects for capture, but much remains to be done. The following recommendations would help ensure that value is harnessed from FD land in a way that supports neighboring communities and sustains conservation.

7. *Simplify Entry Fee Sharing Process, Adjust Entry Fee Levels and Allow Cross-Financing*

A system is now in place to direct 50% of PA entry fee revenues to the CMO. The approved process requires that the CMO financing arrangements be formally included in the Government budgeting process, and this official and explicit recognition of the CMO represents an important step in making co-management a permanent feature of PA management. The entry fee sharing process also creates a strong basis for sustained financing of PA management and benefits sharing with CMO.

The entry fee sharing process, however, can be improved. Presently, CMO are not receiving the money until a year after fee collection, and only then through a budget allocation process overseen by the Divisional Forest Officer (DFO). The delay in receipt of revenues discourages the CMO and the CPG in their work. The process needs to become simpler and more rapid, linking collected entry fees to benefits received by the CMO and the CPG. A dialogue between the FD and CMO about how the process has evolved to date would be a good place to start.

Reviewing overall entry fee levels and entry fee policy is a pressing need. With visitor numbers rising so high as to damage the visitor experience and in some cases the PA ecology, as for example in the high season in Lawachara National Park, the Mochoni area within Teknaf Game Reserve, and Satchari National Park, it is now time to develop a more strategic use of the entry fee process and entry fee levels. The entry fee level for Bangladesh citizens (now Taka 10, or USD 0.14 at most PA) is low by any international standards, but was initially set at this low level by the FD because that was the highest level then considered politically acceptable. The entry fee should be increased, as it would help to control visitor numbers while capturing more revenue for PA management. Entry fee willingness-to-pay and travel cost studies (Haque 2007 and Khan 2003) have demonstrated that visitors are willing to pay entry fees well above this level where suitable visitor facilities are in place. These studies and the experience gained in entry fee management to date should now urgently be capitalized upon in a strategic review of all aspects of entry fee management.

Earlier proposals to allow 50% of PA entry fees to be retained locally at time of transaction should also be reconsidered. This local retention of forest revenue is a standard and legally recognized practice with the Tree Farming Fund and benefits sharing processes under social forestry. Proposals to apply this same local retention approach to PA entry fees were not accepted by the Government earlier, but should be revisited as a way of improving the conservation incentives associated with entry fee sharing.

One important issue to address in such a study is the need to consider cross-financing from more visited and popular PA sites to those that are less visited but of special importance for biodiversity conservation. Formal processes need to be in place to ensure financing of CPGs in particular at less-visited sites. To this end of supporting cross-financing, some portion of fees collected from heavily visited PA should be directed to a "Special Community Patrol Fund" for use by CPG at any PA at which urgent or supplementary payments are needed. Operationalizing this would also depend on the higher level of co-management coordination discussed earlier, so that the representatives of all CMO could decide on the allocation of grants from such a common or special fund.

8.   *Understand and Address the Political Economy Behind PA Entry Fee Auctions*

The assumption that the FD and other co-managers should together be responsible for entry fee collection underlies efforts to improve entry fee management at co-managed PAs. Running contrary to this, however, is another separate trend within the Government towards removing control of the FD and other co-managers over the entry fee collection process and auctioning it to private contractors. Throughout the country, patches of FD land have been walled in and turned into "Eco-Parks" (the most commonly used name) with physical tourist infrastructure

(concrete walkways, bridges, and children's play areas). Associated with these Eco-Park projects is an entry fee. But unlike the entry fees at Nishorgo's co-managed sites, entry fees in Eco-Parks are managed entirely by private contractors. The contractors receive collection rights after a bidding process managed by the central government, with the winning bids paid to the central Treasury.

The two processes – entry fee sharing with CMO at Nishorgo sites and privatization with centralized revenue capture at other select PA sites (especially Eco-Parks) – represent conflicting paradigms of PA management and financing. And, as the number of private contractors benefitting from the entry fee collection businesses grows, the voice of opposition to entry fee sharing with CMO is becoming stronger, as contractors lobby directly to the Government to create new business opportunities through new Eco-Park projects around the country.

Rapid increases in visitor numbers to PA sites will continue, heightening the importance of a clear policy position on who should benefit from those increases.
[Nishorgo Support Project]

Those supporting a philosophy and approach of co-management, where that implies an involvement of neighboring communities in benefits from the PA system, need to understand the political economy of this entry fee collection contracting and take a stand against it. At one level, a broader discussion is needed within the FD and the public about whether creating "Eco-parks" as nature tourist destinations separate from the rest of the PA system is good for conservation in general. But of equal importance is the broader discussion about who should benefit from the natural tourism value of FD PA lands. And who should take responsibility for ensuring protection and conservation of PA lands? Should neighboring communities – through the CMO – be priority beneficiaries, through entry fee sharing in particular? Or should outside parties (such as private entry fee collection contractors) be the major beneficiary? Co-management is threatened by the trend to auction away the rights and the benefits from PA entry fee collection to private contractors, as that auctioning and contracting process separates the role of protecting and caring for the PA from the role of benefitting financially from the PA.

9. Expand CMO-Led and Financed Social Forestry in Buffer Areas

PA entry fees represent only a portion of the revenues that can be generated by PA lands, and entry fees in any case typically pale against the value of timber and other forest resources. The FD has greatly improved opportunities for communities to benefit from timber in its revisions of the Social Forestry Rules. Under those changes, community organizations are now allowed to invest capital and labor in social forestry on Reserve Forest lands. Expansion of community-driven and CMO-guided social forestry within the PA – where this does not adversely impact the biodiversity value of the PA – and in neighboring Reserve Forests has the scope to be a central feature of co-management in the future.

But allowing communities to invest directly within Reserve Forest lands, without any financial contribution by the Forest Department, represents a dramatic change of roles for Range and Beat Officers in particular. Across the country, few of them are ready to allow or encourage community investment to protect degraded lands, and would in most cases prefer to control the process entirely themselves. The full and active participation of these field level officers and staff is a necessary pre-requisite to expansion of CMO-led social forestry. And without a dramatic expansion of this particular new innovation, it is difficult to imagine that PA buffer areas around the country will provide the long-term benefits that would make PA co-management sustainable in the coming decades.

10. *Allow Participatory Enrichment and Re-vegetation Plantations in PA "Core Zones" as Part of Ecosystem Restoration*

The optimal approach for sharing timber revenue under co-management is for the CMO to organize social forestry plots within Reserve Forest land immediately adjacent to the PAs. CPG members or other stakeholders receive social forestry plots in return for their involvement in PA conservation efforts. Many PA, however, do not have any adjacent Reserve Forest land that could be used for this kind of remuneration to community members. The central portion of the Teknaf Game Reserve is one among many examples. At present, those working to protect the heavily degraded Teknaf PA cannot be remunerated with social forestry plots near their homes, since no such Reserve Forest lands exist.

In response to such situations – where core zones are heavily degraded and no nearby options exist for using social forestry in buffer Reserve Forests – the Nishorgo team proposed a solution allowing a special type of social forestry in the core zones themselves. Under the model, identified patches of degraded forest land within core zones would be assigned to a CPG, and a mix of fast growing (e.g. sissoo and albizia) and slower growing native species (e.g., garjan, chukrasi) would be established. After the 10-15 year harvest period for fast-growing species, the native species would be left to continue the ecological restoration process.

While advanced by senior FD staff themselves, this proposal for core zone ecological restoration, including shared benefits met with resistance from inside the FD on the grounds that the Wildlife Act prohibits anyone from benefitting from timber taken from PA core zones. This solution has been proposed, however, as part of a proposed set of "Protected Area Rules," but passage is not yet assured. The objective of establishing such ecological restoration allowing benefits sharing with CPG should remain a priority until they are approved. Without this sort of direct community involvement in mixed reforestation and re-vegetation in degraded core zone areas, it is unlikely that efforts to reforest degraded PA lands will succeed in the near future.

11. *Consider Allowing CMO – and Community Patrol Groups in Particular – to Benefit Directly and Monetarily from Success in Halting Illegal Felling*

The more direct and well-aligned the incentive, the more significant the response. Can an incentive be created for the CPG that directly aligns success in their core role (keeping trees from being felled) with the amount of their remuneration? The Nishorgo team was able to put in place a number of incentives for CMO and their CPG, primarily through opportunities

When timber is illegally felled within the PA, it benefits only those that stole it. As part of a process of ecological restoration, CPG might benefit directly from gradual removal of non-native trees, such as Teak.
[Philip J. DeCosse]

to capture revenue from entry fees, social forestry opportunities or participation in growth of nature tourism.

The Nishorgo team also discussed a more ambitious, and politically sensitive, option for linking success in patrolling to the level of remuneration: allowing the CPG to benefit from sale of small amounts of extremely high value exotic timber from the PA. The search for a more direct incentive for patrollers stemmed from a recognition that any revenue associated with non-timber opportunities would pale against those earned by illegal fellers extracting teak and other commercially valuable timber from the PA. With a single 40-year old teak tree valued at approximately $2,000 at stump, it was difficult to conceive of the modest entry fees or tourism opportunities serving as a sufficient incentive to CPG by comparison. Barrett and Lybbert (2000: 293) were not alone in recognizing that revenue from ecotourism, bio-prospecting, and marketing of non-timber forest products (NTFP) are "relatively meager sums compared to timber." In his review of co-management in Bangladesh, Kotagama (2006) accepted the inability over time for communities to stop the illegal extraction of commercially valuable hardwoods (such as teak). He proposed allowing communities to benefit from the slow and gradual harvesting of mature trees over time, thus adding on more significant benefit streams from FD lands as an incentive to forest conservation, while better controlling the ecological restoration process as over-mature timber is replaced by native species naturally.

The right of the CMO and CPG to cut down a limited number of over-mature trees per year could be subject to their success in patrolling and protecting the PA. Success in patrolling might be reviewed on a quarterly basis, based on commonly agreed upon success metrics, principally that no more than a predetermined number of trees had been illegally felled in the prior quarter. The quarterly review and selective felling process could be publicly monitored, and might even become a major public and celebratory event for the CMO, as they celebrate both success in conservation and the benefits that accrue from the success.

What those that have objected to this approach have forgotten, however, is that the basis for it is already included in approved PA management plans. Those plans already call for the gradual replacement of exotic species such as teak over time by a mix of native species, regenerating naturally. The irony of the present status is that over-mature trees including exotics are now being removed, but the only ones to benefit from that removal are illegal loggers. If exotic trees are to be removed from the PA as a process of ecological restoration, it should be the CMO and CPG that benefit, not the illegal loggers. Processes should be identified to make this direct incentive a reality.

12. Continue Exploring Means of Expanding Carbon Financing Projects

The revenue streams now being generated from the PA and surrounding forest is only a portion of the total economic value of those forests. As carbon markets haltingly develop globally, new revenue capture opportunities will continue to arise for CMO linked with ensuring carbon capture. The Nishorgo team improved the capacity of FD and other specialists to design carbon offset projects, and to measure the amounts of carbon within forest PAs. Eventually, the sequestration of carbon in forests is likely to generate a new and significant revenue stream in Bangladesh, so efforts should continue to build these skills, both at FD and CMO levels, and amongst other technicians.

13. Prepare a Legal Framework Formally Allowing CMO to Benefit from Tourism-Related Economic Opportunities on PA Lands

Nishorgo demonstrated proof of concept in having communities benefit from kiosks at PA entry areas, sales of gift items, and operation of picnic sites bordering PAs. Yet some FD staff – and other government staff – hesitate to formally allow these activities, on the stated grounds that any revenue earned on or from Government lands must be collected and sent to the central Treasury. In other areas (such as at Eco-Parks) the FD allows concession contracts on FD land, but these concessions are obtained only through payment to the Treasury. Without change in relevant regulatory instruments, CMO will not be able to capture revenue from tourist interest at the sites they are working to protect. The CMO are the optimal organizations for benefiting from managing student dormitories, new visitor centers, tourist kiosks or picnic grounds. Policy change to formalize these rights is best done initially in a Government Order, formalized later in a Rule for additionally legal support.

14. Set a New Vision and Policy for Revenue Capture and Sharing from PA Lands

The Nishorgo effort piloted innovative processes by which the CMO could benefit directly from the Government's PA lands. Those new opportunities for CMO benefit have been formalized in a variety of regulatory instruments such as Government Orders, Government project documents, and formal letters from the Government. But it is now time to set a clear and compelling policy and vision for revenue capture from PA lands, and for the role of co-management organizations in benefitting from that capture. The fundamental principle behind a new unified vision and policy need to be clear: that those neighboring communities working to protect valuable PA assets and services should benefit directly from their protection work.

Institutional Changes within the Forest Department

Citizens living around the PA regularly state that if the FD wants co-management to work, then it will (DeCosse and Huda: 2006). The FD has unusually expansive authorities within the boundaries of FD lands. But, ironically, this power of the FD can only be successfully exercised if it is used to build networks of support with stakeholders outside the FD. Without the involvement of neighboring communities through the network of CMO, the FD will not succeed. It is this pre-eminent importance of the FD that drove so much work under Nishorgo to strengthen the organization. But institutional change in any large organization takes time. Policies, guidelines, incentives, rules and processes are developed to set an altered course, but

initially only a small number of staff adopt the new approach, often led by senior staff with vision and leadership. This gradual growth, led by a few champions, has been the brief and still-evolving story of institutional change around co-management at the FD. The conclusions and recommendations noted here aim to provide a blueprint for continued change within the FD.

15. Recognize and Accept Co-Management Organizations as the Principal PA Management Partner of the FD

During Nishorgo's development, many DFOs, Range Officers, and other field staff have perceived the emerging CMO as threats, and have sometimes worked to undermine them. Initially, Range Officers and Beat Officers across all Nishorgo pilot sites made a point of working only with "our people," a euphemism for those well-established local groups, typically with no relation to the new CMO, but under easy control of FD officers and staff.

If the steady removal of timber from the PA is to be reversed, then the FD will need to rely on the social networks and authority of the CMO. [Sirajul Hossain]

Any hope for lasting conservation of PA forests requires that the Department build a stronger supporting social network than the ad hoc collection of "our people" with whom the FD had worked in the past. Co-management is central to the FD's future success as a PA management leader in Bangladesh not because it is a just or egalitarian way of working, but because the FD cannot succeed without it. Not enough staff of the FD have recognized this. Without the alliances that CMO in particular can provide, then the FD will increasingly lose not only the forests they are responsible for protecting, but also their credibility as a conservation organization. The CMO are the viable social and political entity to which local individuals and bodies will turn (and are turning) when the need arises to interact with the PA "managers." Many within the FD have not realized this yet.

Politicians have begun to recognize the value of channeling entry fees and other benefits to neighboring communities around the PAs, most notably around the Sundarbans. As resources associated with PAs become available, the question arises of who should receive and manage those resources. The FD acting alone will not be accepted in this role by donors, project designers or even the central government. A recognized and acceptable conduit will be necessary for any such resources to go to the communities. And it is precisely the CMO that can play this role. The CMO are now constituted and legally recognized at an increasing number of PA sites. Only if the FD recognizes them, works with them, and builds their strength, will they be able to play their key role in PA management and benefits sharing. Only if that role is executed effectively will the FD be able to meet its own objectives of securing the PA system for the present and future.

This change of FD staff opinion and perspectives on the value of the CMO will only come when the change is driven from within. To date, support for the CMO is not yet fully embedded in the FD's culture and vision. Sensitization, awareness-raising, and a change of vision will take place when senior FD staff themselves advocate internally for the practicality of working with and through CMO and of supporting people-based management of PA.

16. Educate and Re-Orient Staff about the Department's Primary Role as Service Provider Rather than Revenue Generator

In spite of policy and strategy changes that have taken place within the Government, it remains the case that most senior staff of the FD perceive their primary role as one of revenue-generator for the Treasury. Within the territorial divisions of the FD, DFOs now have a clear idea of the revenue targets they should meet each year from felling and collection of fines and fees. When critical operational decisions are made in the planning process of the FD, the need to meet perceived annual revenue targets remains a central driver of decisions regarding staffing, felling rotations, and allocation of resources and time of staff. This focus on revenue targets is certainly counter-productive for the staff with responsibilities for managing the PA system. Any staff member who has responsibilities for both territorial forest and PA forest will spend more time on the territorial forest, since revenue capture from timber (primarily from social forestry) is prohibited on PA lands.

This internal pre-eminent focus on revenue generation at the FD needs to stop. It should be replaced by a vision of the FD as provider of a range of critical environmental functions, goods and services to the country. The Government in general and the FD in particular need to articulate and communicate a policy that all forests (both territorial and PA forests) are to be managed to maximize the full range of services they provide. A complementary communications campaign would help in engaging the public more broadly in understanding such a new policy for forests and PAs. A well-structured and articulated campaign could help to fix in the common understanding a simple idea: that forests in general and PAs in particular do less for the country when the FD focuses on fee collection and felling than when forests can provide water, firewood, biodiversity, carbon, and other functional benefits.

17. Create a "Protected Areas and Biodiversity Management" Wing at Forest Department

Given the expanding interest of the general public in PA management (for tourism and biodiversity conservation) and the local public (for direct benefits sharing), the visibility and primacy given to PA management issues will continue to grow. Yet management of the forest PA system continues to be overseen by a mix of Wildlife Circle staff and other staff from the territorial Wings of the FD. PAs and their immediate landscape areas may in one area be managed by Wildlife Circle staff, and in other areas by territorial Wing staff from outside the Wildlife Circle. Even for a single PA, the core zone may be managed by the Wildlife Circle while the buffer area Reserve Forests can be managed by territorial staff. Given the growing importance of PA management, and the confusion caused by managing PAs within territorial Wings with different forest management objectives, it is now time to implement a recommendation made in 2004 (Mitchell, Alam, and Bari, 2004) to create a new Wing within the FD for protected areas and biodiversity management.

Apart from these management issues, there is a more practical and bureaucratic reason for moving from Wildlife Circle to a Wing. Now, the only way forward for an officer working within PAs overseen by the Wildlife Circle is to leave the Circle. Career advancement to the level of Deputy Chief Conservator of Forests (DCCF) can only take place by getting out of the Circle and into a Wing, which means an officer needs to enter the territorial Wings or the Social Forestry Wing. The PA system should allow its own structure for professional promotion and advancement, allowing young officers working on PA management issues to envision specializing and working their entire career in PA management. Creation of a Wing for PA management is an important step in creating a lasting and committed professional cadre of PA experts within the FD.

Along with creation of this Wing, the FD needs now to reorganize the units by which it manages PAs. Initially, the FD staff assigned to PA managed only the lands within the boundaries of the gazetted PA itself. They typically had little or no jurisdiction over FD Reserve Forest lands bordering the PA. Gradually, the FD has recognized that PA buffer areas, including Reserve Forest lands, need to be managed by the same FD PA staff as part of a larger PA landscape. Maps and management plans for PA now include these buffer areas. But this gradual process should now be formalized through a new PA and Biodiversity Wing responsible for all the forest Pas, including not just core areas but also surrounding lands over which FD has jurisdiction. Full control of both core and buffer FD lands would then be in the hands of the designated Wing staff members, with hierarchies rising up to a Deputy Chief Conservator of Forests, PA, and Biodiversity Wing. This formal change would allow, most importantly, rational budgetary management and staff management within the FD structure. The work of staff within this new Wing would extend across the entire PA landscape, with FD responsible for coordinating with other government agencies and private actors across defined landscape areas.

18. Develop Capacity Development and Training Program for PA Managers Across All Levels of the FD

While the mindset of FD staff is slowly changing as a result of PA management experiences, a more concerted and structured capacity development and training plan is still required. Staff at all levels required continuous training opportunities. At the level of new officers, regional training at the Wildlife Institute of India, or exposure to participatory PA management practices in India, Nepal or Thailand are cost-effective opportunities. Refresher and orientation courses can then be organized at national training institutions such as the Forest Academy and the Rural Development Academy. In-service training to FD staff at two-year intervals should be made mandatory and staff performance should be evaluated annually based on the participatory and social achievements.

19. Establish and Maintain Common Standards Across All PA through Centralized FD Skills and Leadership

Although overall FD budgetary and resource allocations are determined from the central level (by Chief and Deputy Chief Conservators), resource allocations within territorial Divisions are made by the Divisional Forest Officers, who have nearly complete authority for deciding how

to implement programs within their Divisions. A long departmental history explains in part this decentralization of decision-making. In the past, DFOs were posted in remote locations where it would have been difficult for central FD staff to control decision-making without long delays and complications. But

Maintaining common standards across all PA requires a stronger degree of centralized FD skills and leadership. Centrally-created designs – such as this ACF office and bungalow design by Module Architects – should present a common image and standard across all PA. [Module Architects rendering]

as the roles and requirements of Divisional FD staff evolve to include formal collaborative management, nature tourism management, ecological restoration, and other new and diverse areas, the decentralized operational model of the FD needs to evolve with it. The need is particularly evident in the management of what should be a unified, seamless, and consistently managed national network of PAs. The PA system – if it is to be a "system" as such – must maintain common standards that allow it to be identified, maintained and – ultimately – admired as a system. And yet, across Nishorgo pilot sites, it has remained the case that resource allocation and technical decisions by DFOs and supporting staff have not been consistent across PAs. Leading examples of this lack of consistency include:

- *Architecture and Construction:* DFOs authorize design of construction interventions that vary widely in quality, conception, and execution. Because best practices are not systematically shared across PA, money is spent on buildings that do not last, or are not appropriate given the needs of nature tourists. Visitors to the PA system may see impressive architectural design in one PA and then find ill-conceived designs in the next.

- *Ecological and Forest Restoration:* Most foresters have been trained in harvesting, preparation, and planting of new plantation, but there is far less consistency of approach in ecological or forest restoration interventions. Interventions in ecological restoration and ecosystem management have been inconsistent across sites. "Restoration" work in multiple PA has included complete clearing and burning prior to planting of new trees, while in other PA, restoration has been conducted per guidelines prepared by the Nishorgo project.

- *Allocation of Benefits to CMO and Other PA Stakeholders:* Differences in the targets for allocation of key benefits to the CMO and PA stakeholders are wide. Some DFO allocate social forestry opportunities to groups that bear little relation to the PA, with plots located far outside the PA boundaries, while other DFO ensure that social forestry gets into the hands of those directly involved in community patrolling, as a benefit that can help offset forest costs.

- *Signage:* Road signs, informational signs, and trail signs together help to create a common idea of standards and "look" maintained across the whole PA system. But DFO and Range Officers decide to post information and signs as they deem appropriate, with different fonts, materials for construction, language, tone, and look. The result is a mix of styles and approaches at different PA.

In all four of these areas, the Nishorgo team prepared and disseminated common technical standards for use across all Divisions, precisely to introduce common approaches. Many FD staff members followed the proposed guidelines and standards, but the adherence to central and common standards was far from universal. A number of steps could be taken to establish and maintain new and common standards across all the PA within the country's PA system. For activities financed from the development budget (and formalized with a Development Project Pro Forma [DPP] document), requirements for common standards and approaches across PA sites should be formally included in the DPP themselves. The Nishorgo-developed guidelines for ecological restoration, architectural construction and signage should all be included as annexures to that document. For projects financed from the revenue budget, there is no way for the central FD to directly control Divisional level decision-making, but the FD can move in the right direction by issuing Directives to the DFO. If the Directives explicitly require adherence to specific standards, the DFO are likely to follow them.

Finally, the FD should establish two technical Advisory Panels for the FD, one for ecological restoration and the other for construction and architectural interventions. The Panels should include experts from inside and outside the FD. Their scope should include prior review of proposals by FD staff for any interventions within the national PA network, and a mandate to recommend consistent standards across all PA. Such Panels could exert a strongly positive influence by both capturing expert opinion and publishing and making available information to the public about the designs being executed across the system.

20. *Explore New Modalities for Obtaining Feedback from the Public for PA Decisions and Plans*

Platforms for public feedback should be a priority for all major proposed actions concerning the PA system. The FD has invited extensive outside public input during revisions of the Forest and Wildlife Acts, and in the revisions of the Social Forestry Rules. But more can and should be done, and not just when new legal instruments are being prepared. When the FD is proposing a new management plan for a given PA, the plan could for example be posted on the internet and in local public buildings for public review and comment. And plans that are currently being implemented should also be made available to the public. At the Divisional level, DFO in particular should share plans with local stakeholders via meetings, web postings, and dissemination to journalists. There is an admitted risk in taking these actions, but what is needed is to establish a set of basic items that should be commonly made available to the public, this should certainly include:

- Proposed and (later) approved management plans
- Approved CMO revenues and budgets
- A list of major upcoming events or activities at the PA
- Studies and information collected for the PA

Releasing just these four categories of information would help in gaining feedback from the public and building stronger support for FD activities.

21. *Meet 2004 Forest Policy Targets for new PAs totaling 152,000 hectares, and do so through Declaration of PA within Larger Multiple Use Reserve Forests*

The strong and rapidly growing desire of Bangladeshi citizens to conserve forests becomes more evident with each arrival of a microbus or tourist bus visitor to the PAs, and with each new opening of eco-cottages and other businesses associated with the PA system. No sooner has the Forest Department and CMO begun to protect a PA, create informational materials about it, and provide PA infrastructure (trails, walkways, bridges) that the number of visitors skyrockets. There are many examples now of the extent to which this has happened at Nishorgo pilot sites (e.g., Lawachara NP, Teknaf GR, and Satchari NP). This rapid growth of visitors is equally evident at the more recreational forest sites, such as the Eco-Park within Sitakunda Reserve Forest, at Banshkali Eco-Park, and at Madhupkunda Waterfall Eco-Park. Bangladeshi citizens are voting with their feet and their money to demonstrate their interest in natural areas of beauty and biodiversity conservation. But the current amount of PA land is not enough to sustain this rapid growth without detrimental effects on the biodiversity the PA is intended to protect for the future. In the high season, controls have had to be put in place on visitors to all these PA.

Newly-created PA in recent years have generally aimed to conserve small patches of natural or particularly attractive forest, leaving larger tracts of more degraded forest in Reserve Forest status. The government should take a longer view, creating larger multiple use PA and putting ambitious habitat restoration plans in place, while allowing dedicated areas for community benefit. [Philip J. DeCosse]

The Forest Department has responded to citizen interest by adding a number of small Eco-Parks to the PA system, with six of them totaling 8,517 hectares, of which Kuakata Eco-Park alone accounts for two-thirds of the total. Other new PA in recent years have also been small in area, including Medha Kacchapia (395 ha), Khadimnagar (697 ha), and Satchari (242 ha). Essentially, the Department is identifying areas of particular biodiversity or tourism interest, usually within much larger Reserve Forest tracts, and carving them out to be Protected Areas. The remaining adjacent tracts of Reserve Forest land generally remain under management of territorial divisions, with little association to the PA.

This trend of new PA creation is a positive one, but it needs to be modified so that new PA are larger. The small PA being carved out of Reserve Forests now are too small on their own to serve as habitat for conservation of viable populations of many mammals. Also, when the Government creates small PA within much larger Reserve Forests, the larger Reserve Forest

areas are essentially written off for conservation, usually under the argument that they are not at present interesting for biodiversity conservation or tourism purposes. But evidence from Nishorgo has indicated (especially at Chunati) how rapidly habitat restoration can occur in degraded forest, and the effect that restoration can have on restoring species and ecosystem characteristics that had been damaged. Finally, the tiny PA approach to expanding the PA system should be changed because, without a more aggressive approach, it will not be possible to meet the targets set by the Government in the Forest Policy of 1994. The Policy states that:

> "The priority protection areas are the habitats, which encompass representative samples of flora and fauna in the core area of National Parks, Wildlife Sanctuaries and Game Reserves. Attempts will be made to increase the amount of this protected area by 10% of the reserved forest land by the year 2015." (Forest Department: 2004)

The Reserve Forest Land under management of the Department stands now at approximately 1,520,000 hectares across the country. The 10% target called for in the policy would imply an increase of 152,000 hectares to the national PA system, which now stands at a total of 252,411 hectares, of which the three PA within the Sundarbans account for 55%.

The Satchari and Teliapara Reserve Forests offer a concrete example of how the FD might proceed. What is now the Satchari National Park is a tiny 243 hectare patch of natural forest with the 1,760 hectare Satchari Reserve Forest and the adjacent Teliapara Reserve Forest of nearly the same size. The Reserve Forests includes remnants of plantations of teak and other commercial species, most of which are now felled, degraded and in a state of natural regeneration. The Range also includes on its southern end near the Satchari National Park, a large plantation of non-productive (possibly sterile) oil palm that not only produces no fruit, and has no ecological value, but also provides an ideal habitat for mosquitoes carrying the deadly cerebral malaria that threatens that area persistently.

Rather than taking out the small piece of remnant natural forest and making it a Park, the entire two Reserve Forests should be considered for a single multiple use zone, including a core zone with vastly extended National Park or Wildlife Sanctuary, and then buffer areas destined for community use in the remaining Reserve Forests. These Reserve Forest, and others like it, could become models of mixed use ecological areas serving the needs of the country (for conservation and nature tourism – wildlife watching, hiking, recreation) the local community (through buffer plantations targeted to CMO stakeholders involved in PA management), the neighboring tea estates (through improved soil conservation and watershed management), and even timber concessionaires under managed concession contracts. At only 2.5 hours from Dhaka, this large area could much more effectively meet the evolving needs of the country through a mixed management framework than in its current role as Reserve Forests with limited management..

A number of other priority candidate areas should in a similar way also be put under multiple use forest management, with large PA core zones. A short list of leading candidates would include the Sitakunda Reserve Forest, the rest of West Bhanugach Reserve Forest, the entire Rema-Kalenga Reserve Forests, the entire Inani Reserve Forests, the Rajkandi Reserve Forest, the FD land in the hills west of Hail Haor, Sangu and similar areas in the Hill Tracts. Only by considering such larger areas for multiple use forests, including PA, will the FD meet

the Forest Policy goals, meet expanded viable biodiversity habitat needs, and provide the land and opportunities demanded by a population increasingly interested in nature tourism.

Supporting Issues and Approaches

22. *Facilitate, Finance, and Encourage a Private Foundation Dedicated Primarily to the Protected Area System*

It is now common in many parts of the world for public PA systems to be complemented by private PA-dedicated NGOs or foundations that exist explicitly to support those systems.[1] Barrett et al (2001) recognized that the complex skill set required to maintain PA conservation called for national-level support. Skills in areas such as fund-raising, conservation science, and tourism planning, to name three, would require support and involvement of expertise not likely to be found at the level of PA. Private PA-dedicated foundations typically undertake one or more of the activities noted above that public PA managers cannot, especially those associated with fund-raising and communications. As importantly, private PA foundations can serve as an independent voice for monitoring and overseeing the system.

The lack of any such single private organization to support the Bangladesh PA system remains an important gap in the institutional landscape. While deliberately creating such an organization using multi-lateral or bi-lateral funds is unlikely to be sustained – the impetus should come from private individuals, not public sector organizations – support should be provided to any incipient organizations that may form with these objectives. A newly articulated policy – such as an amended Forest Policy – would strengthen the ability of private organizations to play this supporting role.

One of the more important contributions of Nishorgo's work – indeed it was a central feature of the co-management approach in the project design[2] – was the increased engagement of civil society members in the PA system at both national and local levels. The roles of local level organizations have been reviewed in other sections of this chapter. At the national level, the increased involvement of civil society partners represented a shift in a long-standing trend towards greater public sector control over the PA system. In the mid-1980s, a conservation forum had entertained the proposal (by the then-Director General of Tourism) that a Wildlife Task Force be composed of a large number of non-Government members, and also that the government consider ceding the management of individual Protected Areas to private organizations (Karim, 1985). Yet by the time Nishorgo started in 2003, it would have been un-thinkable to cede forest PA to private conservationists. The assertion of PA control by the Forest Department was too strong for that. The Nishorgo effort extended the involvement of national level civil society. Work involved engagement in particular of private companies interested in

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[1]   Numerous such organizations now exist. One of the better known is the US National Park Foundation, funded by private donations to "strengthen the connection between the American people and their National Parks by raising private funds, making strategic grants, creating innovative partnerships and increasing public awareness." Such public-private partnerships exist also for individual PA throughout the world, typically assisting in raising private funds and conducting educational activities.

[2]   The expected project "Outcomes" included this: "A variety of institutions within civil society will become more vocal in their support for Protected Area conservation."

associating with nature, environmental clubs, university researchers, the Bangladesh Scouts, journalists, nature tourism companies, and others.

Involvement of one or more private PA-supporting foundations (or NGOs) would be particularly useful to do the following:

- Attract private corporate and individual donations in support of the PA system
- Liaise with leaders of the nature tourism sector on issues related to tourism in the PA system
- Gather opinions and feedback about the PA management work of the FD and the CMO
- Help to raise the profile of the Bangladesh PA system and its work around the world
- Assist youth to get involved with PA conservation through educational activities, nature visits, wildlife monitoring, and outreach to local communities
- Assist nascent CMO across the country in institutional capacity development
- Engage the Bangladesh diaspora community with nature conservation in Bangladesh
- Provide training opportunities or other small incentives to encourage excellence among PA managers within the Forest Department
- Facilitate research into the PA system by national and international research organizations and universities

Some of these roles are already being supported by private organizations. IUCN-Bangladesh provides training opportunities for PA managers: the Wildlife Trust of Bangladesh provides research facilitation and advice; the Bangladesh Environmental Lawyers Association (BELA) provides legal and policy advice; and the Arannayk Foundation has begun providing financial support to CMO. But the lack of any institution committed to the broader set of roles indicated above remains an important gap in Bangladesh, where the public sector has become used to managing PA with little input or support from civil society.

23. Co-Management Organizations Should Target the "Marginalized" Rather than the "Poor"

Nishorgo began in 2003 at a time when poverty-conservation tradeoffs were of particular interest in global conservation discussions. The 2003 World Parks Congress in Durban highlighted issues of poverty (see IUCN, 2003), with those informed by a range of published works (e.g., Fisher (2003) and Brechin et al (2003)). This focus was reflected in the later Millennium Ecosystem Assessment (2005), which found that environmental loss worsens the livelihood status of the poor, and that the poor need to benefit from conservation.

Within Bangladesh, the common refrain about Nishorgo's purpose was to ensure that the poor benefitted sufficiently from the project so that they would no longer destroy the forests. The emphasis amongst the government and implementing partners was on providing sufficient new monetary opportunities to the poor so that they would become pro-conservation.

As Nishorgo progressed, it became increasingly clear that giving a voice to the poor was

as important as providing economic opportunities, but much more difficult to effect. The Nishorgo team operated initially under the assumption that the poor could be involved through the same PA participatory processes that involved better educated stakeholder groups, principally through participation in Committee and Council meetings. But engaging the poor as partners in conservation did not result from these simple participatory efforts. Kaimowitz and Shell (2007: 568) recognized that the focus of conservation would need to go beyond "earlier community or participatory conservation agendas" including increasing income, and should now "involve focusing on the weak and the vulnerable." They understood, as the Nishorgo team eventually did as well, that there is an important difference between focusing on the poor as income-deficient (a problem solved by directing money to the poor) and focusing on the poor as "weak and vulnerable," Efforts to strengthen the role of the poor in decision-making remained a recurrent priority throughout Nishorgo's work, and provided the impetus for including a new poor-focused group within the CMO structure (the People's Forum) when the CMO Government Order was revised in 2008 and 2009.

The word "poor" is commonly used to denote targeted participants in PA co-management. Those who have lived for decades or longer around the PA – such as this woman from the Dolubari Tripura community near Lawachara National Park – are rich in culture, language and ethnic diversity. They have, however, been consistently marginalized from the decision-making about PA resources, and it is this marginalization that needs to be the primary target of PA co-management work.
[Philip J. DeCosse]

Semantics in this learning process were important. The word "marginalized" gradually replaced the word "poor" as a description of the target for social interventions involving equity. The team recognized that the "poor" are poor in material goods because they are marginalized, and they are marginalized because they have been deliberately marginalized by parts of society that would prefer they remain so. It gradually became clear that use of the word "poor" to capture the target group for PA co-management was misleading, and even served to divert resources from the more pertinent goal of governance and empowerment. The solution to the problem of the "poor" is one of poverty reduction: an economic solution that threatens few people, so long as the resources are available. But if the target group is the "marginalized," then the solution is inclusivity, engagement and power-sharing, and this is both a more complex and a more threatening route, at least to those that have held power over the PA.

Use of the broader term "marginalized" rather than "poor" also creates a greater unity of purpose for efforts to engage minority ethnic groups and women in PA management and benefits sharing. For a time, the logic of engaging women was based on the vague notion that there should be a "gender approach." The solution to the "gender" problem was to get more economic opportunities to women. But it became increasingly clear that the central challenge for women was not poverty, but rather their exclusion from decision-making about resource allocation.

It is the marginalization of ethnic and religious minorities from PA decision-making that presented the most complex and intractable challenge to sustaining PA co-management. The ethnic minorities are viewed by many members of Government in particular as politically powerful, able to tap into the networks of Adivasi organizations to counter the directives given by the Government. And yet, the day-to-day status of ethnic minorities within the PA can only be described as marginalized, even when their families have lived within the forests for generations. They are generally not asked to sit at head tables, nor speak first, nor given first access to lucrative social forestry opportunities. There is a long and complex explanation for this, but the fact remains that ethnic minorities living in and around the PA are marginalized in political, economic, and social ways across all the PAs. Efforts by Nishorgo to engage them more formally generally made some limited progress on a PA-by-PA basis, but did not bring about fundamental change.

Solutions to the problem of ethnic marginalization have focused on redressing the problems through changes in legal instruments. But the more immediate and system-wide change will come when the Forest Department staff themselves adopt a new orientation towards the ethnic minorities. When DFO and Range Officers working at the PA engage with ethnic minorities in a manner that enhances the latter's status, recognize their legitimate concerns, and offer them a role in making management decisions concerning the PA, the clashes with minorities will recede from their current status of latent conflict.

24. The Forest Department and Researchers Need to Develop Knowledge Management Priorities and Strategies for the PA System

The Nishorgo project team worked to improve knowledge-sharing through practical steps, such as compilation, scanning, and publication of applied research reference CDs, including hundreds of previously difficult-to-obtain scanned documents and maps on the PA system. One of the compilations focused in particular on the Sundarbans. But these efforts to compile PA relevant documents represented only a small effort to improve knowledge-sharing. Much more can and should be done.

The FD remains a rich source of information, both because its staff are knowledgeable and because it houses critical current and past management documents on the PAs. An annual "State of the Protected Areas" report would go a long way towards communicating available information about the status of the PAs. With the use of CDs to share information now almost obsolete, focus should be placed on an upgraded FD website that can store and share the FD's extensive PA documents and archives. A web platform would also assist in capturing and sharing knowledge from the public that is not contained in published or grey literature.

The institutional orientation of the FD in the area of knowledge-sharing is of pre-eminent importance. Foremost among the practical steps that could be taken is the appointment at the FD of a senior officer with an explicit mandate and authority to share critical FD documents – especially maps and forest PA management plans – with the general public. Such a person, ideally at the level of Deputy Chief Conservator of Forests, might be designated the "Knowledge Management and Research Liaison Officer" within the Department.

The FD need not presume that it alone should manage and make available information on the PA system. A number of NGO have established themselves as leaders in the support of applied research and knowledge-sharing relating to the PA system.

One of the leading opportunities for expanding thinking and learning about the PA system rests in the Bangladeshi diaspora of students and researchers around the world. Websites and communication materials associated with the PA system should make explicit how the FD and Bangladeshi partners can simplify the research process for diaspora students and professors. Data and information should be made available over the web so that researchers can prepare plans prior to arrival in country. Baseline information and datasets on social or biological parameters should be made available openly via the web. Assistance can be given for obtaining permission to reside on or near PA lands while carrying out research.

During Nishorgo, the FD facilitated research and training with the East-West Center (EWC) of Honolulu, Hawaii on the PA system, and this pilot stands as an excellent example of the value of such international research collaboration and sharing. Under this pilot, EWC researchers (both Bangladeshi and foreign) worked with student researchers in Bangladesh to prepare two thematic volumes of research papers on alternative income generation from the PA and on co-management within the PA. Much more can be done along these lines.

To maximize the value of research efforts, the FD should work with partners to develop and publish a set of research priorities, including at least these topics:

- The role of (and benefits to) the ultra poor in co-management as it has developed
- Methods and tools for assessing the social and managerial strength of CMO (as proposed by Khan et al in this volume)
- The political economy of revenue capture processes, and particularly the PA entry fee
- The current benefits accruing to women from co-management by comparison with men
- The efficacy of ecological restoration efforts undertaken (and optimal strategies for future restoration)
- The effectiveness of indicators of forest and ecological health
- The role of forests in the maintenance of the country's wetlands and ensuring food security
- The measures required for controlling the diversion of forest lands for non-forestry purposes

25. Extend Efforts to Develop a Unified and Widely Recognized "Brand" for a National Network of Protected Areas

The project made a special effort to develop a distinct and recognizable program within the FD revolving around co-management of PAs. Communications events and tools were used with the central objective of improving recognition and understanding of "Nishorgo." In addition, the project team worked to develop common architectural standards across pilot sites, as well as common standards for trail development, monitoring, staff interactions with the CMO, and eco-cottage development. By the time the project ended, awareness of Nishorgo amongst

Without an active and sustained national communications campaign, a national network of co-managed PA will not become an easily and commonly recognized element within Bangladesh's environment. [Nishorgo Support Project]

the environmental community was high, and the image was generally favorable. But the project had neither the resources nor the goal of achieving mass awareness of a national Nishorgo PA co-management program. That would need to be the target for a follow-on and expanded effort.

Building mass awareness of – and interest in – a unified co-managed PA system should continue to be among the highest priorities in support of PA co-management. Steinberg (2005) recognized the importance of broad-based campaigns in support of national networks. As work continues on building the PA system through improvements at community and PA level, efforts need to continue to set a clear image and brand of a national co-management forest network in the mind of the broader public. One can envision a day in the near future in which any encroachment on lands within the national Nishorgo network would create a political and popular backlash at both national level (because people care about PAs in their own right and/or because they visit them) and local level (because neighboring populations stand to gain when forests are kept intact and preserved).

A Closing Note

This book represents a response to a recognized need for better documentation of what actually happens when participatory conservation approaches are introduced. Nishorgo introduced many changes to PA management in Bangladesh, and these have been catalogued throughout the chapters of this book. The central aim has been to learn from the process, and to that end each chapter of the book drew specific lessons for consideration by PA practitioners in Bangladesh and abroad. It was hoped from the beginning that conservationists and PA managers would learn from and build upon the experiences of Nishorgo in Bangladesh and create better solutions.

But in addition to these knowledge management objectives, the book was also compiled because Bangladesh is an important place to monitor and learn from conservation initiatives. Given the twin challenges of population density and poverty, the progress of co-management in Bangladesh should be of particular interest to the global conservation community. To these two challenges, others were identified and added, not least rapid economic growth, weak governance, and the technical sophistication of PA management. Bangladesh has had to confront all of these challenges, and Nishorgo remains a work in progress. The Nishorgo effort clearly and demonstratively altered the PA management landscape by introducing a formal co-management approach at sites with high population density, rapid forest loss, economic pressures for forest goods, and high levels of poverty. This single area of progress marked

an important step forward, not just for what it meant in Bangladesh, but for what it means in the global conservation community. Formal structures for power-sharing were introduced into the messiest of political, social, and environmental conditions. And this alone was significant. Whether the FD and others stay on this path – and stay fully committed to it – remains to be seen. But the door is open and can no longer be closed. The FD had reached a point where it had few other options but to engage local stakeholders more formally, and Nishorgo provided a structure for that engagement. The co-management approach tried under Nishorgo has helped the image of the FD with outsiders, at a time when it was sorely needed.

The Barrett et al review of participatory conservation around the world concluded that there is general agreement that "successful conservation initiatives" must possess four characteristics (Barrett et al, 2001: 500):

1. "The authority, ability, and willingness to restrict access and use
2. The wherewithal to offer incentives to use resources sustainably (which in some cases may mean no use at all)
3. The technical capacity to monitor ecological and social conditions
4. The managerial flexibility to alter the array of incentives and the rules of access so as to cope with changes in the condition of the resources or its users"

They went on to note that "conservation programs administered by the central governments of many tropical countries commonly have difficulty meeting all of these conditions. Community-based conservation schemes, on the other hand, too often emphasize only incentives while ignoring the other three conditions."

The Nishorgo project aimed to put in place an institutional framework that could address all four conditions. The FD already had the authority for the first condition and the newly created CMO and CPG enabled more effective application of restrictions. Entry fee sharing, social forestry, and other income sources addressed the second. Tools, approaches, and capacity were put in place for ecological and social monitoring, although their operational use by the CMO including FD need further development. But the most important gap – and the greatest remaining challenge – in the framework for successful continuation of Nishorgo's co-management efforts remains achieving managerial flexibility and a favorable legal framework required for ensuring institutional sustainability of co-management.

The work of Nishorgo continues, led by communities trying new ideas, by an evolving Forest Department, and by a society that itself has to find a balance between the needs of economic growth and the strong and deep cultural desire to conserve the idyllic natural beauty – the "Nishorgo" – of Bangladesh.

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The idea that people might be kept out of forest Protected Areas (PAs) in Bangladesh is unimaginable. Even in the vast Sundarban Wildlife Sanctuaries, honey collectors, wood collectors, and fisherfolk are a regular presence. This is not surprising given that there are 32 times as many people per PA hectare in Bangladesh as in India, 75 times as many as in Sri Lanka, and 1,168 times as many as in Bhutan.

The 27 chapters in this book summarize lessons learned from a five-year effort to introduce collaborative management (co-management) in five forest PAs in Bangladesh as a means of improving protection and management of biodiversity. The five pilot PAs were selected from amongst the 19 PAs under statutory authority of the Forest Department in 2003, and were located in the northeast (Lawachara National Park, Rema-Kalenga Wildlife Sanctuary, and Satchuri National Park) and southeast (Teknaf Wildlife Sanctuary and Chunati Wildlife Sanctuary) of the country. Together, they total 23,000 hectares and protect two notably "charismatic" mega-fauna (Hoolock Gibbon and Asian Elephant).

Each of these five PAs is surrounded by thousands of people, predominantly poor. In this respect, Bangladesh's conservation challenge serves as a harbinger of global conservation challenges, with an increasing population and a rising absolute number of poor people. The need to find ways to conserve – even when population and poverty are high – is ever more urgent. This book aims to contribute to that search for practical conservation solutions "where people and poverty intersect."

The volume is predicated on the need for conservation managers to report on what works and what does not. Rarely are failures documented as carefully as successes. This book aims to redress that. All chapter authors were involved in implementing elements of the program, and were asked to offer their candid assessment of lessons learned. In this sense, the book is intended as a practical knowledge management tool.