Study Report on Selection and Analysis of Value Chains (Final)

For

South East Region - Chittagong

January 06, 2014

USAID's Climate-Resilient Ecosystems and Livelihoods (CREL)

Component 4: Improve and diversified livelihoods that are environmentally sustainable and resilient to Climate Change

Winrock International

Acknowledgment

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Abbreviations

Acronym	Abbreviation
AED	Agriculture Extension Department
ASA	Action for Social Advancement
BAASS	Bangladesh Ayurvedic Aushadh Shilpa Samity
BADC	Bangladesh Agricultural Development Corporation
BARI	Bangladesh Agricultural Research Institute
BBS	Bangladesh Bureau of Statistics
BDT	Bangladeshi Taka
BFRI	Bangladesh Forest Research Institute
BHFCA	Bangladesh Herbal Food & Cosmetics Association
BHMMA	Bangladesh Homeopathic Medicine Manufacturers Association
BHMOA	Bangladesh Hotel and Motel Owner’s Association
BHPMA	Bangladesh Herbal Products Manufacturing Association
BRAC	Bangaladesh Rural Advancement Committee
BRDB	Bangaladesh Rural Development Board
BSA	Bangladesh Strawberry Association
BSCIC	Bangladesh Small and Cottage Industries Corporation
BUASS	Bangladesh Unani Aushadh Shilpa Samity
CCC	Co-Management Committee and Council
CMC	Co-Management Committee
CPG	Community Patrol Group
CREL	Climate-Resilient Ecosystems and Livelihoods
CWS	Chunati Wildlife Sanctuary
DAE	Department of Agricultural Extension
DDWS	Dudpukuria-Dhopachari Wildlife Sanctuary
DFO	District Fisheries Officer
DLO	District Livestock Officer
DOC	Day Old Chick
DOF	Department of Fisheries
ECA	Ecologically Critical Area
ECOTA	Economic Corporation Organization Trade Agreement
EPB	Export Promotion Bureau
FAO	Food and Agriculture Organization
FAOSTAT	Food and Agriculture Organization Statistical Database (United Nations)
GDP	Gross Domestic Product
GI	Geographical Indicator
GOB	Government of Bangladesh
ICS	Improved Cooking Stoves
IDF	Integrated Development Foundation
IGA	Income Generating Activities
IPAC	Integrated Protected Area Co-Management
JDPC	Jute Diversification Promotion Center
KNP	Kaptai National Park

MoA	Ministry of Agriculture
MOEF	Ministry of Environment & Forests
MOFL	Ministry of Fisheries & Livestock
MT	Metric Ton
NGO	Non-Government Organization
NP	National Park
NSP	Nishorgo Support Project
PA	Protected Areas
PF	Peoples' Forum
PPI	Pro-Poor Income
R.Ex.	Resource Extractor
RF	Reserve Forest
SHED	Social Health and Education Development
SME	Small and Medium Enterprise
SRDI	Soil Resource Development Institute
SWOT	Strengths, Weaknesses, Opportunities and Threats
TOR	Terms of Reference
ToT	Training of Trainers
TRIPS	Trade Related Intellectual Property Rights (TRIPS) Agreement
UNDP	United Nations Development Programme
USAID	United Stated Agency for International Development
VC	Value Chain
VCA	Value Chain Analysis
VCF	Village Conservation Forum
WS	Wildlife Sanctuary
WTO	World Trade Organization

Bigha	33 decimal
Chikankari	Hand embroidery
Hajarbuti	Thousand dots on the body
Kani	40 decimal in Chittagong and Cox's Bazaar, 30 decimal in Sylhet region
Karcupi	ornamental needlework on clothes
Lakh/Lac	100,000
Runner	Sapling of Strawberry
Sadar	Administrative center of a district
Upazila	Sub-District

Executive Summary

USAID Bangladesh's Climate Resilient Ecosystems and Livelihoods (CREL) is a five-year project with the aim to scale up and adapt successful co-management models to conserve and protect ecosystems, improve governance of natural resources and increase resilience to climate change. The objective and mandate of the project is to strengthen the ability of the poor and disadvantaged who rely on forest and wetland resources to adapt to climate change, and to improve and diversify their livelihoods, through environmentally sustainable means. In order to identify the alternative livelihoods on which the project can work on, a value chain selection and assessment was carried out. The main objective of the study was to find out the potential value chains and analyzing the value chains to come up with strategies and interventions to ensure sustainable livelihoods for the project beneficiaries of southwest region that lead to reduce pressure on natural resources. The study was conducted in two phases where in phase 1, three potential value chains were identified that meet the project objectives and in phase 2, in-depth value chain analysis of the selected value chains were done.

The study was conducted in line with the USAID guideline for value chain analysis as available on microlinks wiki (http://microlinks.kdid.org/) in almost every step. CREL proposed a series of criteria for value chain selection which was adopted by Innovision for the selection exercise. However, due to the special considerations for choosing climate resilient value chains for the project beneficiary who were already selected (listed), slight modifications were made to serve the project's purpose. In the first phase, we used funnel approach to identify and select three potential value chains for the region. The approach used five steps; first, we have reviewed relevant secondary literatures, interviewed CREL staffs and reviewed potential site-wise value chains identified by CREL regional staffs and develop a long list of value chains. Then using cut-off criteria the team has selected 5-10 value chains. The cut off criteria that used was *'Value chains that deplete forest and/or wet land directly will be ineligible for selection'*. Besides cut off criteria 12 more selection criteria were set and weightage assigned against each criterion. Then the team conducted a rapid assessment of the short listed value chains in the field. Overall, 24 in-depth interviews with influential stakeholders along with 6 FGDs with 96 beneficiaries were conducted. In addition, 100 beneficiaries were individually profiled to get a sense of their economic situation and available resources. The findings then were validated with key stakeholders and project staff in a validation workshop. The set of mandates and economic criteria were used to rank the attractiveness of the short listed value chains. Each value chain was given a score against every criterion. Then the highest scored value chains were selected for the region.

The main challenge of the study was to reach all the selected beneficiaries through the selected three value chains which was quite impossible as a significant number of beneficiary do not have minimum resource to engage in any value chain. In this context, consultation with CREL management, the consultants looked at other trades opportunity to the beneficiary for skill development along with the in-depth value chain analysis of the three selected value chains and nature based tourism.

In Southeast Zone 1 consisting of Chittagong, Rangamati and Banderban, the chosen value chains are fruits, Vegetables and medicinal plants and handicrafts. Our estimation is that these value chains and trades will cover majority of the target beneficiaries, if not all of the target beneficiaries of this region.

With the list of selected value chains, a team consisting of lead consultant, value chain analyst and research assistant went to the study region again; southwest. To analysis the selected value chains, the consultants followed the USAID microlink guidelines for value chain analysis. The value chain analysis covered end market analysis, value chain mapping, constraints and opportunities analysis and strategies to address the constraints and utilizing the opportunities. In total 381 respondents of different type of actors of these three value chains were interviewed in this phase to have in-depth information about the value chains.

In Southeast Zone 1 consisting of Chittagong, Rangamati and Banderban, the chosen value chains are fruits, Vegetables and medicinal plants and handicrafts. Vegetables include Papaya, pineapple, guava and amropali. It has a growing trend and can engage forest extractors which might reduce pressure on natural resources and provide opportunity for homestead gardening. Handicraft, has a high growth potential involving women and low resource. There is also a visible market gap in the demand-supply situation in the locality. The presence of the big bazaars serving a densely populated Chittagong metropolitan area proved to be useful for that potential gap.

For vegetables, the region is supply deficient with vegetables from Northern (Bogra and Mymensingh) and Southern (Jessore) regions coming in to fill the demand. Some of the local vegetables like brinjal, taro, tomato and gourds have high demand due to product quality in terms of freshness and taste. These attract the consumers with higher disposable income who are willing to pay the premium for the quality. The steep demand gives an edge to the local production of these vegetables compared to outside competition by showing the room for a potential increase in quantity of production.

For fruits, the market demand is mostly met by fruits coming from outside of the region. Popular fruits like mango, Litchi, banana, jackfruits, berry etc. are sourced nominally from different parts of the country from districts like Rajshahi (mango), Dinajpur (pineapple, late variety litchi), Rangpur (banana), Natore (hybrid watermelon), Comilla (plum) and Meherpur & Chuadanga (early variety Litchi). Moreover, there are various fruits that are imported from other countries. For example malta comes from South Africa, which is seeing a declining trend due to increased demand for it in the European market in recent years. This large gap can be partially met by local production of fruits which is much suited in the hilly areas of the region. The topography supports the mixed cultivation of various fruits which can be brought to the regional market.

The handicrafts and handloom value chain was selected covering bamboo and bamboo products (Lai, tukri, basket, mora, dula, kula, fish trap etc.), handloom products (Kantha, lungi, gamchha, thaan etc.), and fishing nets which are mostly eco-friendly. The potential inclusion of women into off-farm economic activities played a pivotal role in selection of this value chain. The traditional skills possessed by these women to produce handicrafts are suggested to be used as leverage. The availability of necessary inputs in local markets and low working capital and less land requirement have given confidence to the selection. Besides, there are some government initiatives to promote handicrafts and handloom, to train the producers and to provide easy loans are in action, which can be utilized in favor of strategic intervention.

Apart from the constraints found in the individual value chains the overall constraints lie in access to technology and knowledge along with access to finance. The homestead productions found in the area have the potential to grow up to medium to large scale commercial production with the help of scientific cultivation method for vegetables, medicinal plants and fruits. Access to market is another constraint which has to be dealt with the inclusion of intermediaries and knowledge transfer. Handicrafts and handloom can be brought up to industrial level with inclusion of activities involving intermediaries like national level retailers (Aarong, Zaatra, NogoDola etc.).

To address the constraints the study recommends building the knowledge base of the beneficiaries on modern practices, scientific cultivation through training and capacity building activities. Exposure visits and demonstrations should be undertaken to accelerate the commercialization of the low scale economic activities by generating willingness to commercialize. Cultivation of short term fruits and medicinal plants should be initiated by project activities to bring results within the project period along with the introduction of higher yielding methods in regular homestead and medium scale vegetable production. In addition, the traditional practice of handloom and handicrafts should act as a leverage to involve many a beneficiary to lessen their dependence on natural resource extraction.

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Part I: Introduction

Chapter 1: Background and Context of the Assignment

Traditionally, rural inhabitants in Bangladesh relied on the resources extracted from natural sources like forests, wetlands, rivers, and sea for their livelihood. Till date, livelihood of the poor, especially, those having limited or no access to land is still dependent on these resources. However, the increase in population means more extraction of these resources. Hence, relying only on natural resources for livelihood has become difficult for the resource extractors. At the same time, due to excess resource extraction, the sources are not being replenished naturally, resulting in adverse climactic effects. Under this circumstance, alternative livelihood options are required for these resource extractors, which will reduce their dependence on natural resource extraction, as well as improve their livelihoods through increased income.

From March, 2013 Winrock International and the partners have started implementing the Climate-Resilient Ecosystems and Livelihoods (CREL) project to conserve ecosystems and protected areas in Bangladesh. They aim to improve governance of natural resources and biodiversity, and to increase resilience towards climate change through improved planning and livelihoods diversification. The project works on the four broad geographic areas/regions in Bangladesh targeting beneficiaries that are disadvantaged, poor/ultra-poor, women and youth who are dependent on natural resources.

This study intended to identify and analyze value chains in the target areas that can potentially reduce pressure on natural resources through enhancing the livelihoods of the target beneficiaries through alternative income sources. Innovision Consulting Private Limited has conducted the study according to the guidelines provided by CREL and executed the proposed assignment through submission of this Value Chain Selection and Analysis Report.

Chapter 2: Objectives

The objectives of the study are:

Phase 1: Analyze all potential Value Chains and select 4 Value Chains (including Nature based tourism which is preselected) for full analysis of the region according to the criteria mentioned below;

- Climate Resilient – Value Chains that are climate resilient and/orhas the potential to reduce risk from climate change threats.
- Potential to reduce extraction of natural resources
- Ensured Market Demand and/orOpportunity to link with markets
- Potential to increase income of the marginal and vulnerable populations who have small amount of land or totally landless
- Potential to create employmentthroughout the value chain
- Potential to incorporate women and youth
- Potential to involve MSMEs
- Potential for growth
- Potential to be benefited from the available support services
- Suitable for the economically disadvantaged area particularly in the landscape/wetland area of CREL regions

Phase 2: A detail analysis of the selected value chains to get a vivid picture of each value chain and to formulate the strategy/interventions to strengthen the value chains and create scope for sustainable livelihoods.

Chapter 3: Scope of Work

3.1 Geographic Scope

The assignment was carried out in the protected areas, core zones and buffer zones of the forests and wetlands in the following specific geographic locations:

Table 1: Geographic distribution of study areas (Southeast Region 1)[1]

Districts	Upazilas	Sites
Chittagong	Lohagara, Banshkhali	Chunati WS
	Sitakundu, Mirersarai	Baryadhala NP
	Fatikchhari	Hazarikhil WS
	Rangunia, Chandanise	Dudhpukuria- Dhupchari WS
Rangamati	Kaptai and Rangamati Sadar	Kaptai NP

3.2 Demographic Scope

We understood that the target beneficiaries for the project are disadvantaged poor/ ultra-poor households, including women and unemployed youth, dependent on natural resource extraction for their livelihood. To analyze the prospect for inclusion of these communities in formal value chains, it was essential that all existing actors in the prospective and selected value chains are interviewed as respondents in addition to the target beneficiaries. Therefore, the scope of the study included all value chain actors irrespective of their social and economic conditions, in addition to the core target beneficiaries of the CREL project.

3.1 Methodological Scope

3.1.1 The changing face of poverty

The general understanding of poverty has changed in the past two decades. It is now widely accepted that poverty is dynamic (people move in and out of poverty) and multidimensional (limited access to services and social networks are as important as insufficient incomes). Vulnerability is an important concept in understanding poverty. It relates to risk and people are vulnerable to poverty when they are more at risk than others, due to factors at household level (e.g. ill health), community/ regional level (e.g. drought) and national level (e.g. policies which affect the costs of goods and services).

3.1.2 Need for market-based approach

Establishing a new value chain or entering an existing value chain are both challenging endeavors for smallholder marginalized groups. Even if a market opportunity is recognized, smallholders still require entrepreneurship, business skills, education, and a range of other assets to start an enterprise to commercially compete with the market actors. Business and entrepreneurship skills and orientations are usually challenging to acquire in the rural areas particularly for the smallholder marginalized groups. There is often a high degree of illiteracy, poor understanding of market dynamics and market interface, inadequate access to capital and finance, lack of appropriate resources such as land, tools and equipment, as well as poor negotiating skills and poor economy of scale that increases the difficulties faced by smallholders in starting up a value-adding enterprise. Thus, one-time solutions to the current problems facing these individuals lack lasting impact as the market dynamics change, bringing new challenges and new problems. Consequently, there rose a need for market-based approach which, instead of providing direct assistance to these individuals for immediate solutions;

[1] Terms of References

provides technical and facilitating assistance to enable the individuals to solve their current problems as well as future ones for a more sustainable impact.

3.1.3 Market-based approach: Challenges and opportunities

Although the focus of CREL has been to increase the participation of smallholder marginalized groups in higher-valued product value chains, a particular emphasis has been on the promotion of market-oriented, often of specialized products, with support from either the private sector or public sector, and facilitated through NGO's and other international development agencies. However, in such high-value product value chains, the targeted smallholders have limited control. Power is often concentrated among one or a few chain participants that coordinate market activity. As the high-value product is based on consumer assurance, high standards for quality and safety, competitive price, and reliability of supply, lead actors in retail or export often coordinate the value chain members. The ability of smallholder farmers to take the lead is limited, as is their ability to maximize economies of scale. The market is also constantly changing, requiring rural farms and firms to respond and innovate by, for example, switching market channels, changing how they are organized, or investing in equipment. Such value chains may thus be less appropriate for many smallholder actors, who may lack the ability to handle dynamic markets and comply with their increasing amount of cultures, customs, regulations and standards.

The focus is on identifying the potentials of local value chain development through in-depth analysis of successful smallholders.

Local value chains that meet growing local demand might be more within the reach of smallholders. Local markets may also be characterized by new consumer demands due to changing lifestyles and increased knowledge of the benefits of a more diversified products. Recently local value chain development has been advocated by environmentally conscious consumers demanding local farm products that they perceive as being of higher quality, leading to a rise in the number of specialty and local markets. Many producers have taken advantage of this trend by selling their produce at the growing number of local farmers' markets and/or directly to customers, thus creating local product value chains. The present study primarily focuses on identifying the potentials of local value chain development in the CREL working areas through an in-depth analysis of successful smallholder initiatives in local value chains that could give valuable insights on how to develop value chains based on local resources and context.

3.1.4 Need for Value Chain Analysis

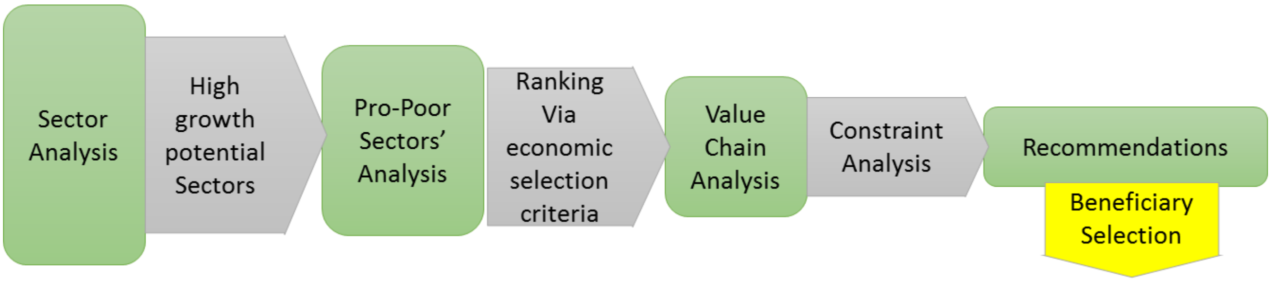
Although Bangladesh presents a story of decline in rural poverty during recent times, coupled with expansion of the non-farm sector, a stagnant agriculture output (and also low productivity) as well as low growth in wages, the expansion of workers in the non-farm sector, though an encouraging trend about the potential of the sector in terms of employment, has however not demonstrated the capacity of the sector to provide growing wages and incomes to the workers. There is thus pressing need for looking more closely at the possibilities of promoting rural livelihoods in specific regions such as the working areas of CREL. The present study may thus be seen within the above larger canvas of poverty, livelihoods and employment.

3.1.5 Climate Resilient Value Chain Analysis

The objective of the project is to strengthen the ability of the poor and disadvantaged who rely on forest and wetland resources to adapt to climate change, and to improve and diversify their livelihoods, through environmentally sustainable means. The study was aim to identify three potential value chains that have significant income increase and employment opportunity for the CREL targeted beneficiaries who are already listed by the project.

In traditional value chain analysis process we start at the end-market to find the most lucrative pro-poor value chains and then work backward through the value chain to reach the beneficiaries of the selected value chains, wherever they may be. The process is summarized below:

Figure 1: Normal Value Chain Process



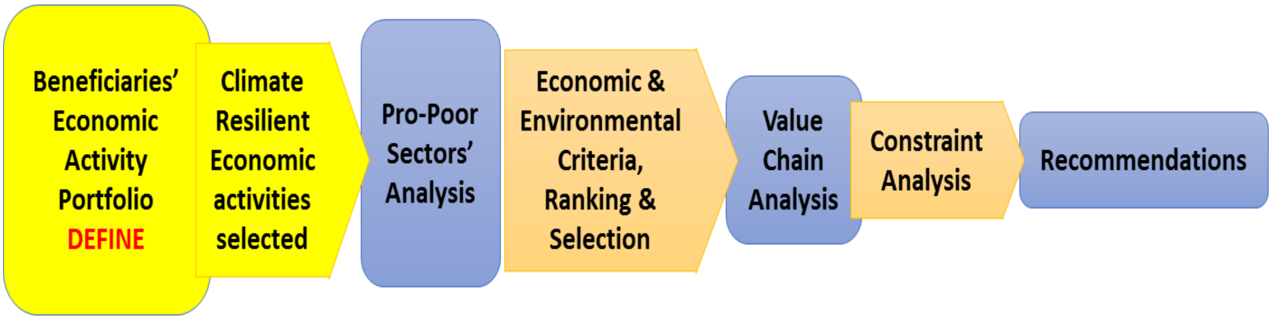
However, this process is not perfectly suited to VCA for Climate Resilient Value Chains due to the following reasons:

1. The beneficiaries of CREL have already been selected, limited to specific areas.
2. They live within Protected Areas, which due to infrastructural challenges and special institutional constraints mean that the identified end-market is often completely irrelevant to their current economic situation.
3. The project has diversified and wide range of working areas (4 regions with 23 sites, 1000 Village conservation forum, 45 Co-management committee, 8 RMOs) adjacent to protected and wetland area.
4. Location and beneficiary of the project are preselected and their capabilities well known
5. The selected value chains should have climate resilience and supportive to the natural resource management
6. The value chains should have year round income opportunity with a minimum market facilities and support to better NRM
7. Most disaster prone and vulnerable location VS functional market
8. Sustainability VS local practice and behavior
9. Value of Natural resources VS opportunity of exiting localized market
10. Many of the constraints are known like- commercial practice, private sector interest, volume of production, scale of production, assets, access to support market, vulnerability extent, survival condition, existence of market player and infrastructure, stakeholders
11. Region specific target beneficiaries to reach through value chains
12. The project will not provide any direct subsidy to the beneficiaries
13. The project has a provision of skill based capacity building

So we have limited scope to look at the community level rather look at the specific households who are listed as CREL beneficiary. We have kept our lens on the beneficiary of the project not to the region. In this context, we had to have preliminary idea about the CREL beneficiary's economic activities, experience in different income generating activities, existing resources and their demographic status. But in the traditional value chain analysis we need to start from the sectors where we identify the value chains that have maximum participations of the project target people who are not identified initially. Besides, if we follow the normal value chain analysis approach there might be a chance to select a value chain that have higher growth potential but low participation of the CREL targeted beneficiaries. For example, in Southwest region, Shrimp value chain has highest income increase opportunity and also has good growth potentiality but no participation of the CREL beneficiaries. This value chain is not suitable for them as well as its need high investment and improved tecchincal know how for cultivation. The geographic dispersion of the project sites and dissimilarities of the project beneficiary interms of available resources and skill in potential value chains guide us to do the clubbing of potential value chains where multiple value chains were clubbed together to ensure maximum participation of the beneficiaries. For example, under vegetable value chain we clubbed different vegetables like raddish, okra, chili etc. that ensured maximum outreach for the project.

This approach was slightly modified in the value chain selection phase considering the special features of CREL project**.** The study began by looking into the beneficiaries' economic activities first and then narrowing down the choices based on both economic potential and climate resilience to few VCs for deeper analysis via a rigorous selection process. The process is summarized below:

Figure 2: Climate Resilient Value Chain Process



3.1.6 Advantages of Livelihoods Development with Value Chain Approach

The key advantages of combining livelihoods and value chain analyses are summarized as follows:

- Livelihoods analysis goes beyond costs and prices, income and consumption to provide complementary information to assess (rather than measure) the choices that people make in particular contexts. It helps in explaining what is sometimes termed "weak supply responses" to trade liberalization, for example, when farmers have not responded to higher prices on one crop by producing more of it. It recognizes that other outcomes besides increased incomes are important to people – for example, food security, or more secure rather than higher incomes, or a more sustainable use of natural resources. It allows an assessment of possible trade-offs between outcomes.
- Value chain analysis, provides an essential picture of how the local smallholders interacts with the large markets and the way in which some firms may influence the workings of actors in other parts of the chain. The way in which pressure on prices and costs are often transmitted from retailers to producers has a critical bearing on the potential for enhancing livelihoods through supply chains for particular products.
- As a result both livelihoods and value chain analyses were combined and at the same time the entire assessment was conducted in a participatory way – either in the sense of generating data and understanding with different stakeholders or more powerfully, facilitating learning and action by people who are targeted by particular economic and trade issues based on the market dynamics. It was observed that increasing the involvement of different stakeholders, particularly those who are usually marginalized, contributed more in effectively in the process of designing interventions for income generation.

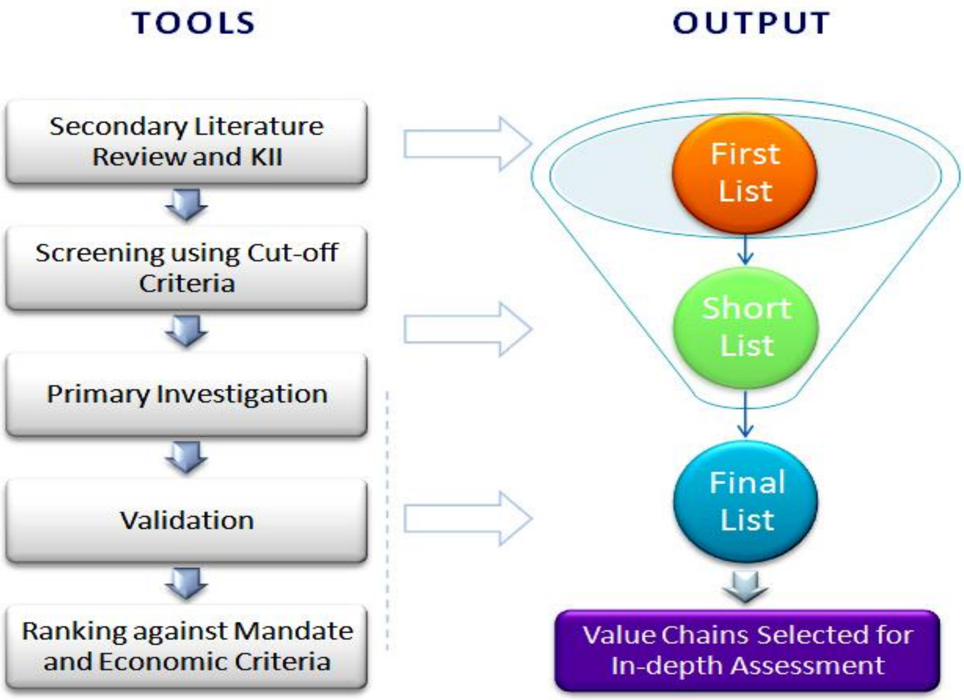
Chapter 4: Methodology

As mentioned above the study is a two part process with Value Chain Selection in Phase-1 and Value Chain Analysis in Phase-2. In each step of the process, the project personnel of CREL worked with the team in every step, validating the outcomes at each step.

4.1 Approach of the Value Chain Selection

Innovision used a funnel approach to identify, analyze and select potential value chains for a project intending to invest in value chain development. The approach (figure 1) uses five tools to generate three outputs the last of which are final list of value chains selected for in-depth assessment to design interventions of the project.

Figure 3: VC Selection Funnel- The Step by Step Approach for Value Chain Selection



4.1.1 Secondary Literature Review and KII to generate first list of potential value chains and value chain Selection criteria

The consultants reviewed all relevant literature on value chain analysis, sector and subsector studies, CREL project papers, policy documents, case studies that are relevant to development interventions in the selected regions. Several key informants interview were also conducted at this stage to develop the first list of potential value chains. The key informants also included CREL staffs having significant experience on value chains in the selected region. A first list of potential value chains for each region was developed.

Based on the literature and interviews with the CREL staffs, one cut-off criteria and twelve criteria for value chain selection were developed.

The cut-off criteria are usually those that are highly related to the project's mandate and therefore its capacity to deliver results. It is noted that the cut-off criteria are used so that value chains in which the project has least scope for contribution are eliminated. This helps increase relevance and efficiency of the screening process. The Cut-off criterion that was used in the screening of the first list of value chains is given below:

Value chains that deplete forest and/or wet land directly will be ineligible for selection

The relative weightages were given to each of the selected criteria based on the importance in consultation with CREL team. The following table depicts the definition, relative weightage and justification for each of the selected criteria:

Table 2: Criteria Definition, Relative Weightage and Justification

Criteria	Definition	Weight	Justification
Climate Tolerance (Low tolerance=1 High tolerance=5)	Climate tolerance is the ability of social or ecological system *(inside the value chain)*to absorb disturbances while retaining the same basic structure and ways of functioning, the capacity for self-organization, and the capacity to adapt to stress and change. *(IPCC.ch)*	3	If there is low climate tolerance, it will likely have high resource requirements and thus not be chosen. Non-resilient crops will already be eliminated by the cut-off criteria.
Climate Resiliency (Low resilience=1 High resilience=5)	Climate change resilience is the capacity of an individual, community, or institution *(within the value)* chain to dynamically and effectively respond to shifting climate impact circumstances while continuing to function and prosper. *(IPCC.ch)*	3	Climate resiliency is one of the core mandates of CREL project which leads to its high weightage
Resource Extraction Minimization (Not minimized=1 Highly minimized=5)	The chosen value chain must reduce and minimize the pressures on the natural resources in the environment; it should be a more eco-friendly alternative to their current income-generating activity.	5	Since this is one of the core objectives of the project, it has the highest importance
Women and Youth Inclusion (Low inclusion=1 High inclusion=5)	The value chain involves women and youth in its operation and creates employment opportunity for them.	5	This is also one of the core project aims and thus has high weightage
Outreach (Low outreach=1 High outreach=5)	Number of beneficiaries the developing the value chain would directly and indirectly impact.	2	While being one of the main indicators of the Project's success, since the beneficiaries are limited within very specific areas, the outreach number is not the most important aspect of the project.
Growth potential (Low growth=1 High growth=5)	This criterion measures the estimated feasible demand for the value chain product/service in the local, national or international market and growth trend of that market.	5	One of the core market criteria, it is crucial for the chosen value chain product/service to have a lucrative and growing market to attract beneficiaries away from their current source of income. Entering a new source of income requires investment in terms of time, labour and money for tools, inputs etc. The value chain product/service must have clear potential to convince the beneficiaries that it will be worth it.
Income (Low income increase=1 High income increase=5)	Potential monthly income to be generated from choosing the listed value chain: • Area farmed • Yield • Cost of production • Quantity sold • Revenue	5	Regardless of how climate resilient a value chain may be, it must generate significantly higher income than their current source, or it will not be adopted. Thus, the highest weightage is assigned.
Private sectors participation (Low interest=1 High interest=5)	The presence of private sector firms who are willing to promote the listed product/service and work with the beneficiaries to develop the production base or market channel.	3	Presence of willing private sectors is important for the feasibility of intervention in an M4P approach to value chain development. However, generally if private sector firms are not present, they can be found and involved thorough linkage building interventions, while project support with financial and human resources makes them willing to cooperate. Thus, it is not as important for this factor to be present for value chain selection.
Development priorities and favorable policy of government	Government departments and offices located within project area along with others providing support services like NGOs and other project offices.	3	The project areas all lie close to protected areas identified by the government. Thus, there would be additional restrictions and legalities concerning economic activities, project operations etc. In particular, development of new value chain of

(Low priority & favorability=1 High priority & favorability=5)			products/services might be of particular interest to the government's policies concerning these areas. Thus, it is important for the chosen value chain to have the approval of the government policies and their favorability would be an added advantage.
Synergy and potential collaboration (Low synergy=1 High synergy=5)	Complementarity of value chain with other projects in the area	3	Protected areas remain in focus for other projects and initiatives. As such, if the chosen value chains match those of other projects, there lies a scope for CREL to collaborate with them for synergistic impact on beneficiaries.
Risk (High risk=1 Low risk=5)	• Entry barrier • Capital intensive • Business risk Every value chain would have its own risk of failure attached with it. Generally, economic activities with greater risks and greater investment also have greater profits. This criterion would judge the potential return in each value chain in terms of sustainable income versus the risk of failure.	4	Considering the beneficiaries, who are very poor, the value chains selected must balance investment with return. The income generated from these potential value chains should be sufficiently higher than their current source while keeping the investment requirements and other risks low in order to make the beneficiaries willing to change. The project aims to facilitate these transitions and assist in minimizing the initial risk with better knowledge, market access and support services. Thus, slightly higher risks should not be a factor for which a value chain should be discarded; resulting in its lower weightage compared to other criteria.
Scope for value addition (Low scope=1 High scope=5)	This criteria judges the scope for developing the beneficiaries' current source of income to move them to a product/service with higher value addition	3	Current beneficiaries are involved in value chains which are not dependent on natural resource extraction. However, due to the limited income from them, they also engage in other activities of resource extraction to supplement their income. If these value chains can be developed for higher value addition and thus higher income, the beneficiaries would be more willing to stop or minimize the resource extraction based activities. However, these value chains may be promoted regardless of value addition since they do not depend on natural resource extraction and it will be more feasible to encourage income generating activities the beneficiaries already do rather than move them to a completely new one. Thus, a relatively lower weightage is assigned compared to other criteria.

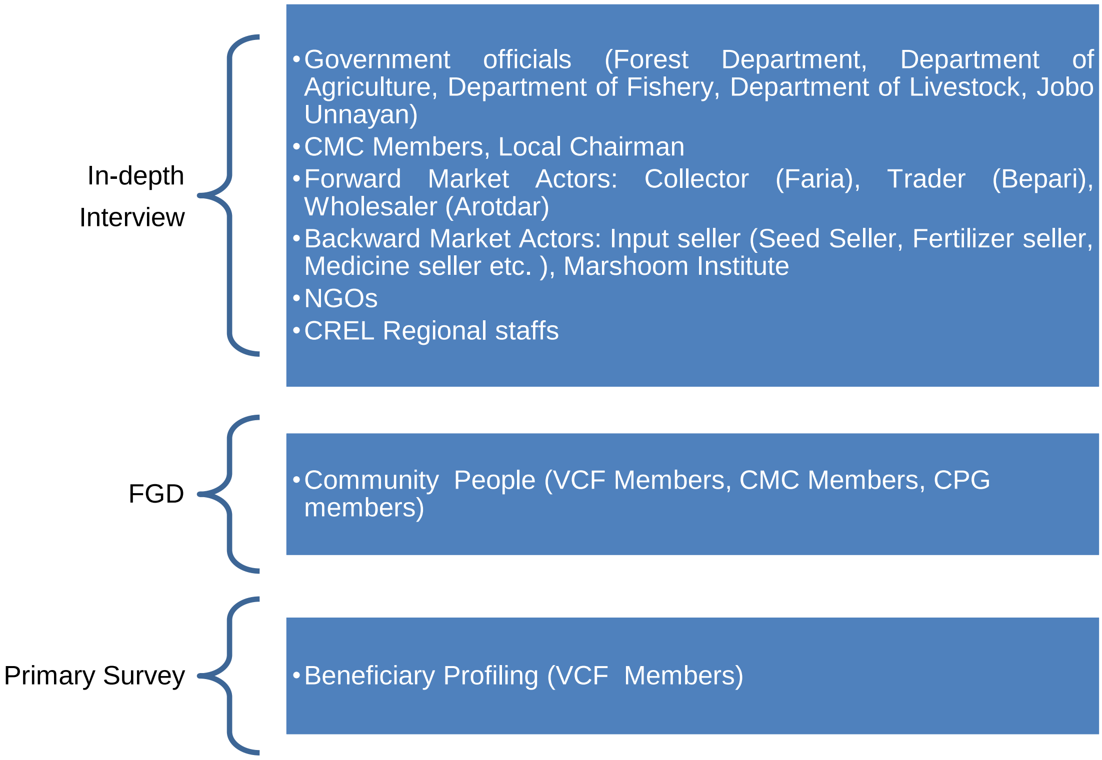
4.1.2 Screening using cut-off criteria

Once the first list of value chains developed, a short list of value chains is derived by using the cut-off criteria. That is, the value chains that have passed through the cut-off criteria were selected for the next step. A list of 8-10 value chains were selected for the region.

4.1.3 Primary Field Investigation

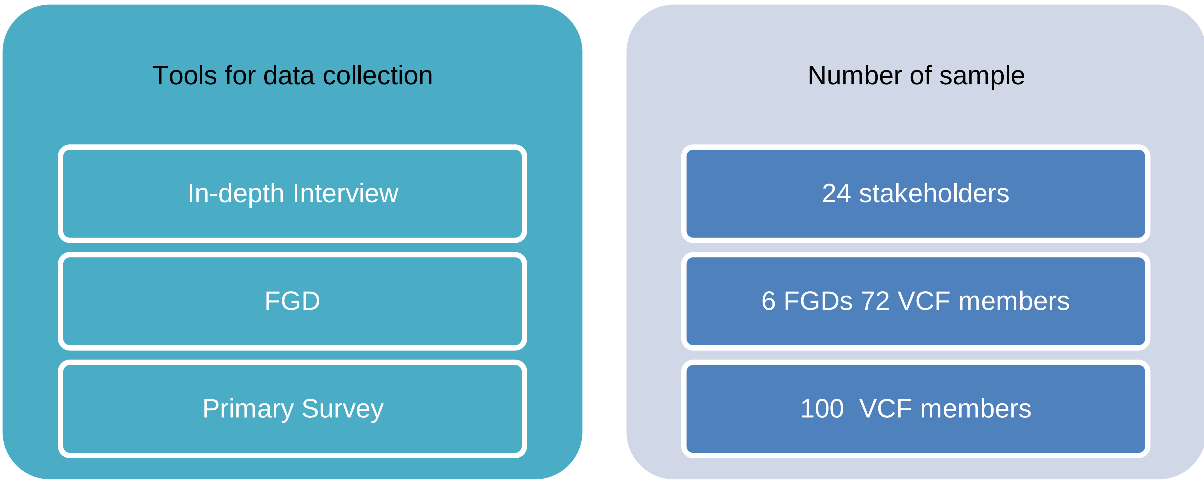
Once the short list was developed, the consultants prepared a checklist in light of the criteria that would be used to compare the attractiveness of the potential value chains. This checklist was used to collect information on all the short listed value chains in each region. During the primary investigation, the consultants conducted in-depth interviews with government officials, forward market actors and backward market actors in the region and in the country, NGO staffs, staffs from other projects engaged in the region and CREL staffs. In this stage, a beneficiary profiling is also conducted through the CREL regional staffs to have better understanding about the community people. Besides, project staffs were also joined in the primary investigation with the consultants and were updated about the findings. They had provided necessary recommendation to the consultants on the field. The tools that were used in the primary investigation and also the type of respondents in field are shown by the following chart:

Figure 4: Respondent Type



The following table summarized the total number interviews conducted in the study area in value chain selection phase:

Figure 5: Type of respondents in value chain selection phase



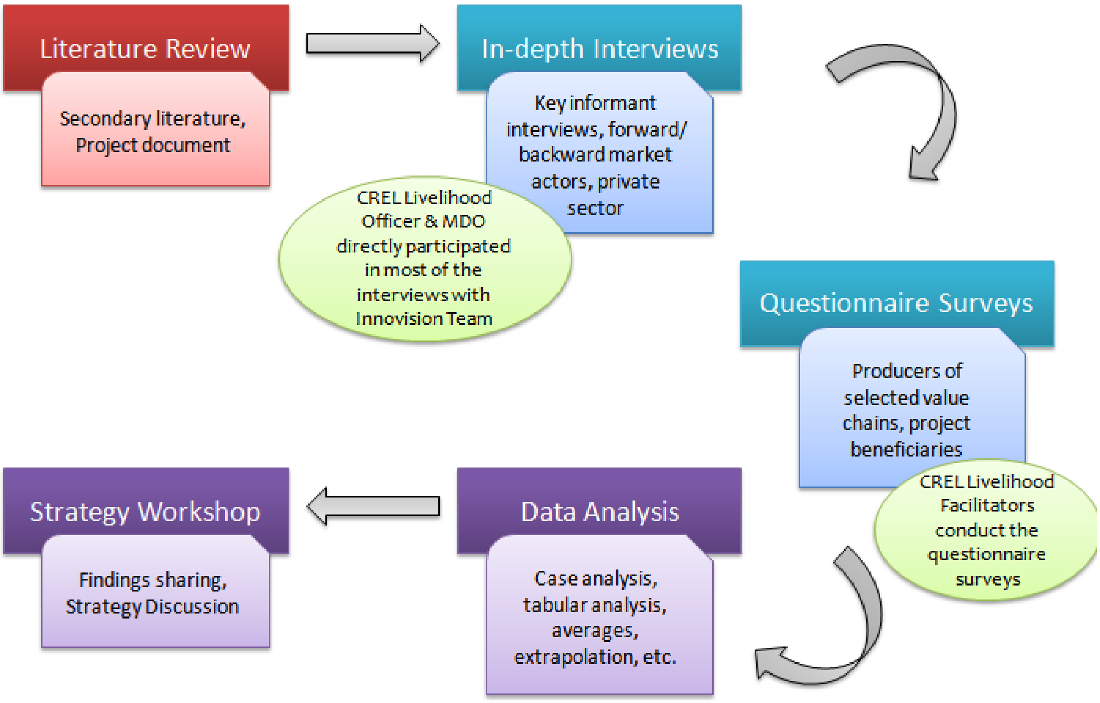
4.1.4 Validation Workshop and Ranking Exercise

After completion of field investigation the information were duly analysied and a daylong validation workshop was organized in Khulna where CREL staffs, different government officials of relevant fields, project beneficiaries, representative of local government, representative of CMC were present. The field findings were shared in the workshop and validated by the participants. Then a ranking exercise was conducted with the direct participation of participants and the top three value chains were derived based on the highest ranking.

4.2 Approach to Value Chain Analysis

Once the value chains were selected, we began with the analysis. The study process started with the literature review, followed by in-depth interviews and questionnaire surveys. The accumulated data was then analyzed and shared in the strategy workshop.

Figure 6: Value Chain Analysis Process



4.2.1 Literature Review

Literatures from different secondary sources like value chain reports, journals, government publications, newsletters on vegetables & medicinal plants, fruits, handicrafts, etc were studied to have a preliminary understanding on the end market, market segments and market potential of the value chains. Besides, the key informants for the value chains, different market actors, regulatory and development stakeholders were also identified through the literature review. The key-informants included stakeholders at different levels of the value chains like government officers, private sector representatives, researchers, NGO personnel, and projects who are working directly with these sub-sectors. A set of checklists for key informants and different value chain actors were developed at this stage of the study. It was also used as the guide to identify the production clusters, major markets and hence in designing the field plan for the in-depth interviews.

4.2.2 In-depth Interviews

In-depth interviews were conducted for the different value chain actors of Vegetables and Medicinal Plants, Fruits, and Handicrafts at both the national and regional levels. The purpose of the in-depth interviews was to gather facts and information on the market systems of the aforementioned value chains to gain a more qualitative overview of the sub-sectors. The workshops and in-depth interviews helped the team to develop a general idea about the existing value chains and also to comprehend the market prospects, the constraints, and the strategies to ensure sector growth and also to identify the potential partners for the project to some extent.

The in-depth interviews were conducted on the program areas in three districts of the Southeast region for the comprehensive situation analysis of the selected value chains. There was a team of three consultants engaged in the study on this region. The program areas located in the predetermined sites were taken under the geographic coverage of the study.

For assessing the value chains, a set of checklists of different value chain actors was used. A total of one hundred and six (106) respondents of different tiers of these value chains and support functions were interviewed through snowball sampling technique[2]. The respondents included **backward linkage actors** like seed sellers, nurseries, fertilizer and pesticide sellers, other agro input sellers (fruits, vegetables, medicinal plants); **producers**(vegetable farmers, artisans, fruit farmers); **processors** (medicinal plants, fruits); **forward linkage actors** like farias/paikers, arotdars, retailers; and **support functions** like government bodies, NGOs, projects.

Table 3: Number in-depth interviews in value chain analysis phase

Backward Linkage Actors	18
Producers	52
Forward Linkage Actors	25
Support Function & other actors	11
All	**106**

4.2.3 Questionnaire Surveys

Alongside the in-depth interviews, a set of questionnaires were designed for producers of three selected value chains to capture the core issues in greater detail and quantifiable terms for analysis. The questionnaire survey was conducted by the CREL project staffs.

A full day orientation session was facilitated by the Lead consultant, accompanied by the whole team, for the program staff in each region, to brief them about the objectives of the research and the method of data collection. The session included briefing on the specific objectives of the study, presentation on the selected value chains, introduction of the different value chain actors, detailed field plan, sampling method (snowballing), team composition, and debriefing of the questionnaires and checklists, including rehearsal and mock sessions.

Ninety five respondents were interviewed by the project staffs and the detail sample number is given below:

[2]Snowball sampling is a non-probability sampling technique where existing study subjects recruit future subjects from among their acquaintances.

Table 4: Number of respondents in the questionnaire survey

Questionnaire Survey	South East Region 1
Producers	60
Extractors and other value chain actors	35

Along with these respondents another set of 180 respondents (producers) of three value chains were interviewed by the project staffs solely for the site specific cost beneft analysis of vegetable, fruits and medicine plants.

4.2.4 Data Analysis

The analysis of the collected data included: End Market Analysis, Value Chain Mapping and Opportunities and Constraints Analysis.

End Market Analysis

The end market analysis showed the market opportunities, gap in demand and supply and scope for value chain upgrading to be undertaken by the project. It involved an extensive consumer market research. Since a full scale consumer market research was too broad and resource intensive for the time and scale of this study, the study relied more on secondary information and information collected from value chain actors like retailers, wholesalers and collectors to get the information required for the end market analysis.

The analysis revealed the different market segments, size and share of the market segments (for the local, regional, national level markets), growth trends and gap in the end market.

Value Chain Mapping

The value chains selected in the 1st phase (selection of value chains) were scrutinized in the second phase and value chain maps were developed to illustrate channels through which the product flows from the conception stage to the production stage and finally to the end consumers through the traders. It identified the actors and support service providers, their roles and interactions within the value chain, and their performance. The maps revealed the scopes to upgrade and the bottlenecks in the value chains that restrict up-gradation.

The mapping was done based on the findings unearthed from the in-depth interviews and questionnaire surveys conducted through snow-ball technique.

Constraints and Opportunities Analysis

After mapping the selected value chains of different regions, the opportunities to include the target beneficiaries into the value chains while conserving the ecosystem and climatic condition in the target geographic areas were identified. A comprehensive cost benefit analysis has been done on each and every specific product in the selected value chains on specific sites under each of the regions. This cost benefit analysis revealed the strengths and weaknesses of every sub-sector to be worked on. As the geographical, topological, and climatic environment vary from site to site, the sub-sectors with high prospect in the program areas differed.

After identifying the opportunities, the study identified the reasons for which the beneficiaries are not utilizing the benefits of the value chain opportunities. The systemic dysfunctions in the market systems within the value chains that hinder a profitable and sustainable inclusion of the poor people were identified and a problem tree analysis was conducted.

Aside from identifying the value chains, the study identified the income generating activities (IGA) in and around the program areas. Analysis for each IGA has been done to illustrate the feasibility of execution and inclusion in the intervention strategies. These IGAs are for the consideration of CREL management to be used for the beneficiaries that cannot benefit for value chain development activities in the selected value chains immediately.

4.2.5 Strategic opportunities

Based on the assessment and analysis of findings, the team tried to address the following questions through an analytic framework. Some of key questions are as follows:

- What is the likely effect of market driven value chain approach to the target community's improved income, profitability and growth?
- As large number of market actors are competing for a smaller market share, how to segment the market, what are the prospects for selected products and later market expansion, diversification, capacity utilization, etc., taking dynamic market, changes in market needs, taste and knowledge and technological changes into account?
- As the market transitions from limited to wider comprehensive interface even export, how are products and decisions of procurement changing, and what new institutional support is needed to facilitate these changes?
- Under which alternative product delivery systems (high technology vs lower technology, pioneer vs conservative, segmented vs industry) should be developed that would increase value-addition and meet the need of our target community?
- What forward and backward linkage would promote sustainable market diversification, and how can these be appraised in the absence or presence of an effective market information system?

The analysis found strong arguments for selective opportunities in the local market intensification for the target community. Firstly, there is substantial scope for expanding market by catering the specialized needs of the market; secondly, developing capacity for delivery of comprehensive need; and thirdly, developing market for value-added services through the community.

4.2.6 Strategy Workshop

The findings and analyses were shared over a two-day strategy workshop. The valuable inputs from the core team members of CREL and the supporting allied organizations were taken into account to validate the findings and complete the analysis. In addition, broad intervention strategies were discussed in the open forum. The participation of all stakeholder organizations relevant with the project inspired the study to be aligned with the core objectives of the project. The outcome of the discussion was region-wise intervention strategies formed by the regional staff of CREL and guided by Innovision team.

Part II: Value Chains Selection for Southeast Region 1 (Chittagong, Rangamati)

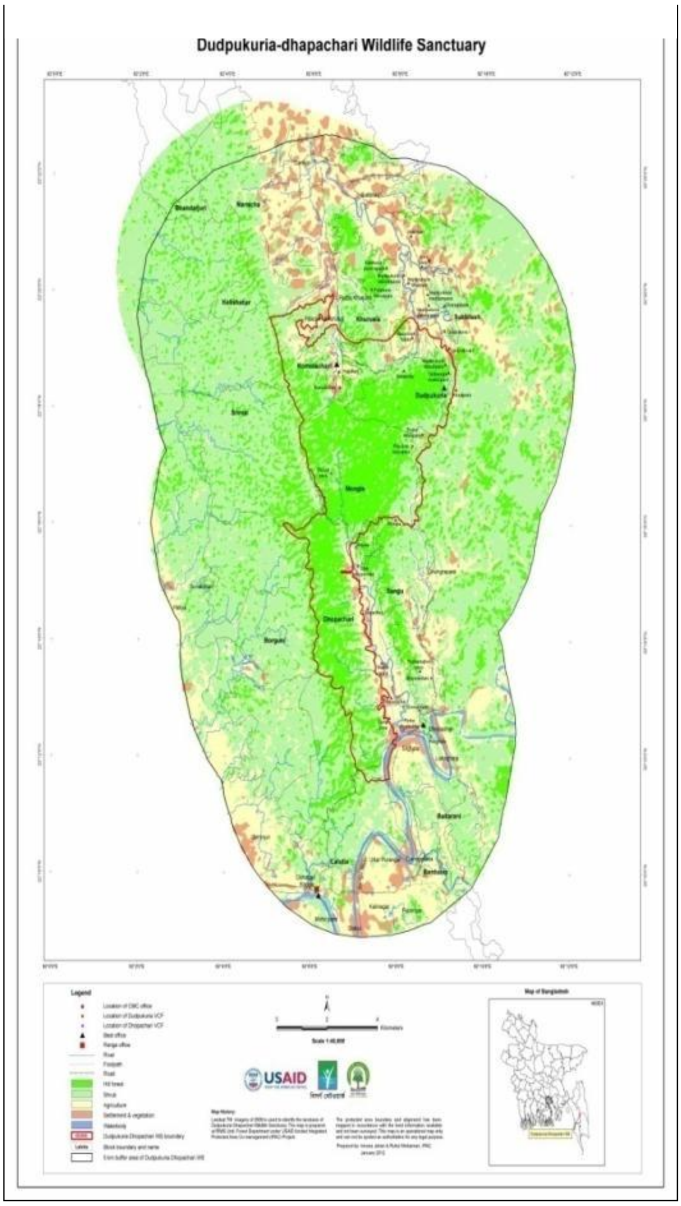
Chapter 5: Value Chain Selection for Southeast Region 1 (Chittagong and Rangamati)

5.1 Climactic Assessment of Target Area

5.1.1 Overview of Natural Resources and Biodiversity in the Area

The study area of Chittagong Southeast Zone-1 is comprised of three protected areas (PA): Dudpukuria-Dhopachari Wildlife Sanctuary, Chunati Wildlife Sanctuary and Kaptai National Park. The forests are tropical evergreen or semi-evergreen. The overall topography of these sites is undulating, with elevations ranging from slightly too highly elevated. A number of rivers and their branches surround the region. Major rivers and canals are Karnaphuli, Ichhamati, Sangu, Matamuhuri, Dolukhali, Ichhakhali, Shilok khal etc. Regardless of continuous degradation of the forests, this region is still regarded as home to one of the widest variety of flora and fauna in Bangladesh. An overview of natural resources and biodiversity in the area is discussed below.

Figure 7: Dudpukuria-Dhopachari Wildlife Sanctuary



Dudpukuria-Dhopachari Wildlife Sanctuary

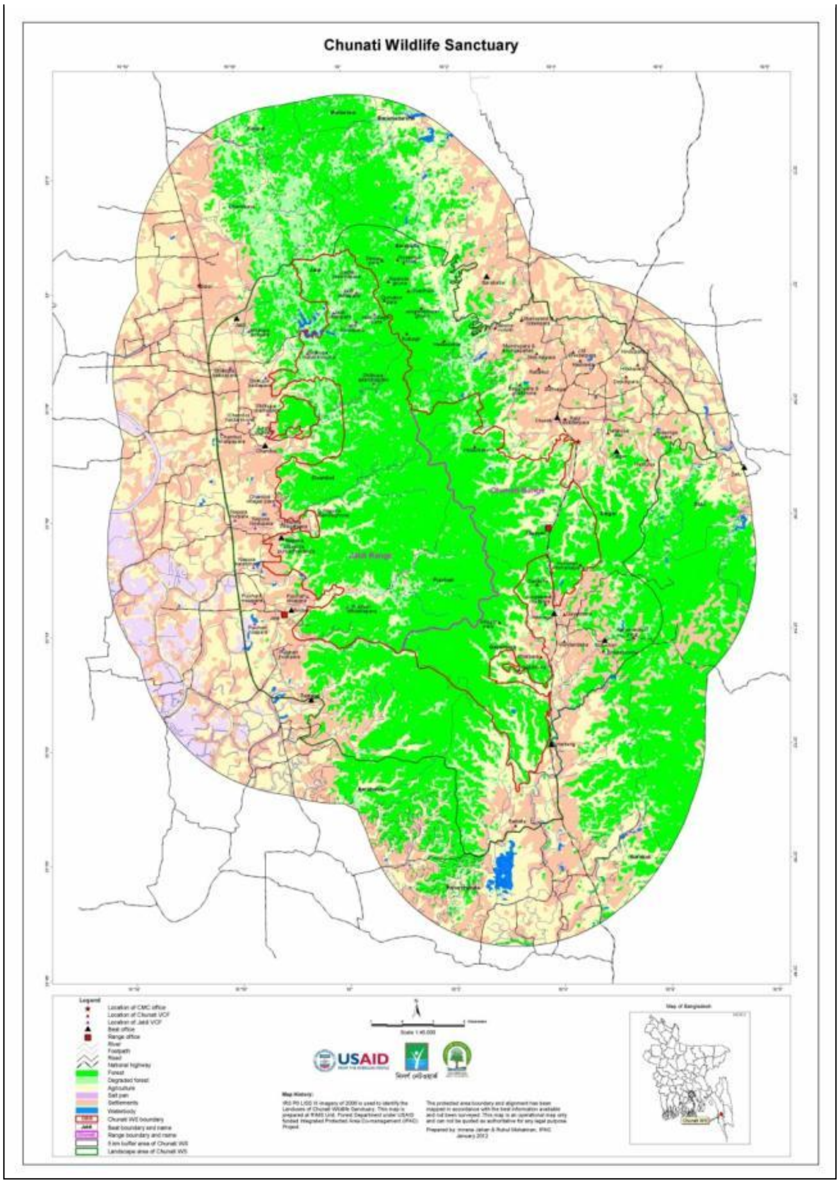
The Dudpukuria-Dhopachari Wildlife Sanctuary (DDWS) is a tropical evergreen and semi-evergreen forest, which was established under the Integrated Protected Area Co-Management (IPAC) with the financial assistance from USAID in 2010. This sanctuary on 4,716 hectares of land is located under Dudpukuria, East and West Kurushia, West Dhopachari and Jungle Dhopachari mouza. The Ministry of Forest and Environment declared 'Dudpukuria-Dhopachari' area as a wildlife sanctuary located in Kurushia range of Rangunia upazila and Dohazari range of Chandanaish upazila.

Historically this forest is covered with evergreen tropical rainforest species and rich with diverse flora and fauna. The dominant tree in this tract is Garjan while other common species are Gamar, Hargoza and Chapalish. In DDWS wild animals include Asian Elephant, Capped Langur, Flying Fox/ Indian Flying Fox, Hoolock Gibbon, Large Indian Civet, Asiatic Black Bear, Orange-bellied Himalayan Squirrel, Palla's Squirrel, Pig-tailed Macaque, Rhesus Macaque, Slow Loris etc.

Chunati Wildlife Sanctuary

Chunati Wildlife Sanctuary was formally established in 1986. The total area of the Sanctuary is 7,764 ha distributed in seven beats (Chunati sadar, Aziznagar, Herbang, Jaldi, Chambol, Puichhari and Napora) of Chunati and Jaldi forest ranges. Banskhali Ecopark is situated in the western edge of Chunati Wildlife Sanctuary and provides a range of recreational nature activities.

Figure 8: Chunati Wildlife Sanctuary

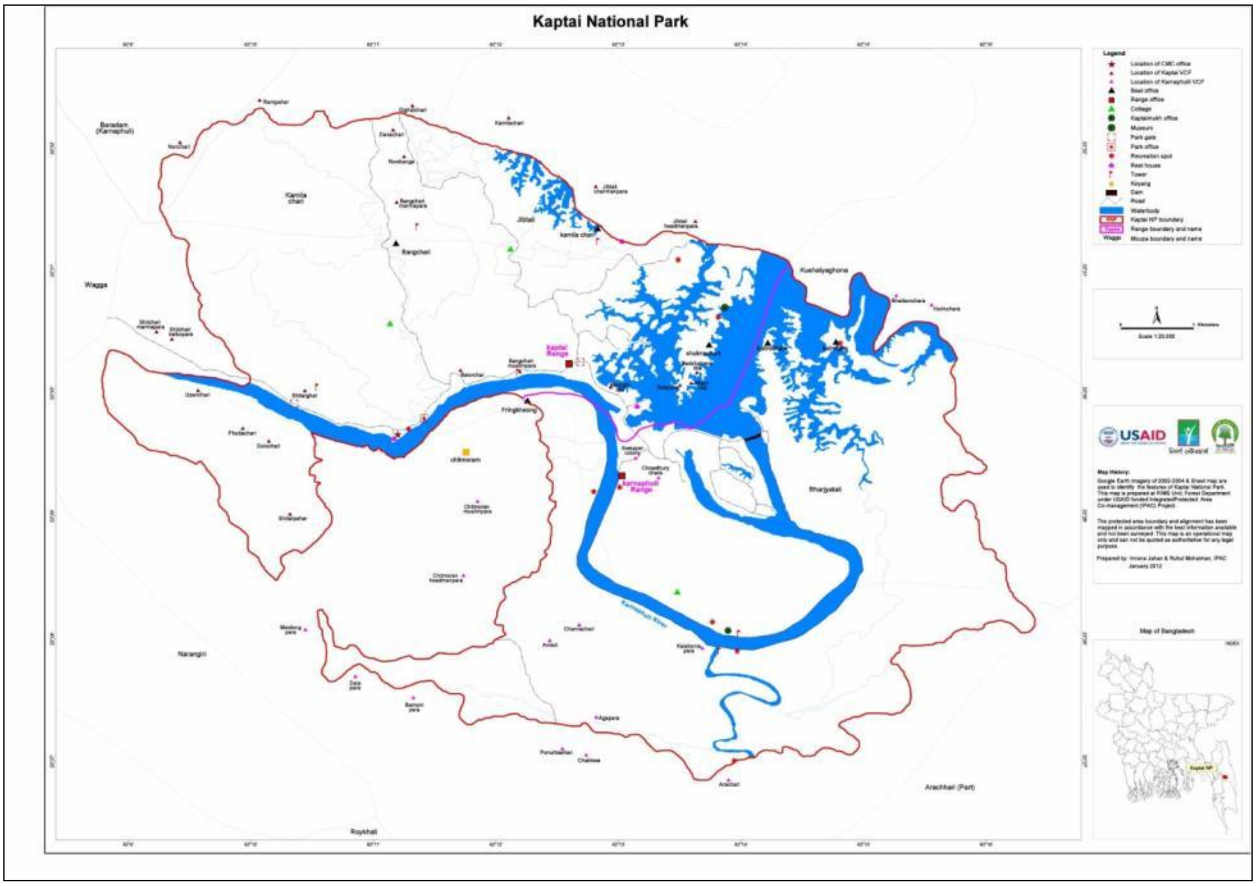


Garjan is the main tree species across the Chunati WS. Other naturally-grown plants include Sal, Banyan, Olive, Amla, Haritaki (black myrobalan), Bahera (Beleric myrobalan), Kamranga (carambola), Chapalish and different types of bamboos. Among the wild animals the Asian elephant still roams around this huge tract of forest land. Other dominant wildlife species are Small Deer, Fox, Civet, Squirrels, Wild Boar, Jungle Fowl, Dove, Myna, Parrot, Hornbill etc. Several snakes such as Darash, Kalantar, Cobra, Python and Laudoga are also commonly found.

Kaptai National Park

Kaptai National Park (KNP) is situated on an area of 5464 ha forest, which is a tropical semi-evergreen type with a hilly terrain and many valleys. Kaptai National Park is unique for its historic monumental Teak plantations. These plantations have taken the look of natural forests and supports wildlife. This park has two ranges – Kaptai and Karnaphuli – comprised of several forest beats: Kaptai Sadar, Bangchari, Kamillaachari, Sukhnachari, Rampahar, Karnaphuli Sadar, Kaptaimukh, Kalmichara and Fringkheong.

Figure 9: Kaptai National Park



The main tree species found in KNP are Civit, Garjan and Chapalish with some bamboo and cane species. Notable animals include the Asian elephant, Barking deer, Hoolock gibbon, Wild boar, Sambar, Orange-bellied Himalayan squirrel, Chinese pangolin, Binturong, Clouded leopard, Bengal slow loris, Rock python, Green cat snake, Blue-winged leaf bird, Hill myna etc.

5.1.2. Environmental and Climate Change Issues in the Target Area

Forests are of great socio-economic importance as a source of timber, pulpwood, fuel, and many non-wood products providing livelihood for people inhabiting in and around them. Furthermore, forests offer the basis for a broad range of other economic and non-economic values, such as resources for tourism, habitat for wildlife, or the protection of water resources.

The investigated forest areas are situated in the Chittagong Hill Tracts (CHT), which is the only hilly terrain of Bangladesh. Major environmental concerns for these forest sites are –

- Tropical cyclone
- Erratic rainfall and Hail-storm
- Flash flood
- Climate change impact
- Attack of wild elephant

A wide span of forest area and the resources therein are badly damaged as the tropical cyclones hit Chittagong and its coastal vicinity. People of the studied area experienced the worst cyclonic devastations during 1991, 1997 and 2007 in the recent past. The innumerable loss of intangible benefits and services of biodiversity and other natural and environmental resources are yet to be estimated.

Inconsistent and unpredicted rainfall is causing severe impact on the forest biodiversity as well as the agriculture of the studied sites. Undue precipitation is impounding natural life cycles of both flora and fauna of the area. The respondents of the study reported that this calamity has now become larger threat in comparison to the cyclonic destruction. In addition to heavy rainfall, hail storm was also reported as an adverse natural phenomenon that causes a lot of damage to the crops and vegetation of the forests.

Deposition of sandy materials on agricultural land is frequent in the lower part of the valleys of hilly forests of Chittagong zone. This is the net result of deforestation in the hills of the upper catchment areas. During the monsoon season, when heavy rainfall occurs in the upper hill areas, it causes flash floods in the lower plains. With the runoff, the water carries sandy sediments that spread over agricultural lands. In the areas of the lower foothills, deposits of sandy materials compel farmers to abandon such land for cultivation. Land degradation by deposition of sandy materials on agricultural land also occurs when there is a breach of embankments blocking the natural streams and creeks of the forest. On the other hand, deforestation is causing heavy soil erosion in the slope of forest hills leaving a vast area barren and deserted.

Like other parts of the country, the studied forest sites also experience the changes in spatial and temporal distribution of temperature and precipitation due to the global warming. It was observed that temperature is increasing day by day and frequency of cyclone has also increased within a decade. Moreover, continuous sea level rise due to climate change recently resulted in increased salinity in the coastal sediment, which is likely to become a major threat for the western part of Jaldi Range of Chunati WS in no time.

The wild elephant in the forest areas, especially in DDWS and Chunati WS, demolish crops and naturally grown trees both in protected forest and landscape. It is also a major hazard for households and other establishments in the nearby locality.

5.2 Community Profile of the Target Area

5.2.1 Livelihood Status

Most of the beneficiaries in the study area are occupied in agricultural activities. Both male and female members of the households take part in the agricultural and homestead chores. Common crops are paddy, different vegetables, fruits, culinary plants, spices, maize and medicinal plants. Swidden (jhum) cultivation is still practiced across the tract. However, the VCF members are well-sensitized to reduce the span of jhum cultivation through adapting alternative livelihood.

Other than agricultural production, the VCF members are also engaged in handcrafts, small-scale business or trading, cattle and/or poultry rearing, fishing, fish farming, daily labor and miscellaneous services.

The primary survey revealed that 44% of the VCF population got at least junior high school (class-VIII) education while a half of the total beneficiaries can only sign their names. Other people, mostly elderly ones, are illiterate.

In the forest-blessed study area, most people are young. More than 70% of beneficiaries are aged from 20 to 40 years old. Average size of the household is 6 while two of them earn for the family on an average.

About 20% of the households do not own any land. The survey found that the average monthly household income of the beneficiary is BDT 6750.

5.2.2 Infrastructure & Operating Environment

In the protected areas of DDWS, Chunati WS and Kaptai NP the array of infrastructure facilities should be widened more. A significant part of this tract is yet to get electricity connections. An institutional change is also necessary within the Forest Department, from administrative roles to those of facilitators, given the more public oriented approaches taken in the past and present (e.g., social forestry and co-management).

Sufficient infrastructure facilities for Eco-tourism are still inadequate in the study area. Roads, eco-cottages and foot trails in these sites need to be developed and reconstructed. Security for tourists is also scarce.

It was observed that there are numerous local markets in the target area. Frequency of trading and number of traders/intermediaries also exhibit a healthy and active market scenario. However, syndication of traders and lack of market information kept the producers away from reaching the distant or high-price markets. Poor communication and transport also hinder the potential growth of producers and other the value chain actors in the study area.

5.2.3 Status of Natural Resource Dependency

Among the beneficiaries, around 57% extract wood and bamboo from adjacent forest areas. Practically, a higher percentage of the target community is dependent on forest resources. Firewood, fodders and culinary plants are regularly extracted from the forests; however, timber or other wild resources are being collected at a much reduced rate, reported the respondents. It was also seen that continuous efforts of IPAC resulted in a declining trend of natural resources extraction from the protected areas studied.

5.2.4 Engagement in Commercial Activities

As discussed earlier the beneficiaries are involved in several value chains and other commercial activities. Being experienced or involved in these income generating activities, the beneficiaries developed or inherited some skills that are not exploited yet properly. About 50% of the respondents in the study area claimed that they are capable of making different types of handicrafts including bamboo-cane products, handloom fabric or clothes and fishing nets. About 30% of the VCF members showed their confidence in doing better through continuing agricultural practices, while livestock management skills were claimed by nearly 10% of the respondents.

5.3 Value Chain Selection

5.3.1 Long list of value chain activities

a) Preliminary list of value chain activities

The present study observed a number of value chain activities in the investigated area. Some major value chain activities are mentioned below.

1. **Swidden (jhum) Cultivation**: Swidden farming (jhum) is widely practiced in the studied area, especially in the Kaptai National Park. In this cultivation farmers cut down trees, shrubs and herbs in a selected area, burn the plants, and then sow seeds after the first pour of the year. After cultivating a particular area the land becomes fallow for years. However, swidden farming in the reserve forest is prohibited. Common crops are paddy, banana, chili, ginger, turmeric, maize etc.

2. **Medicinal Plant Cultivation**: Cultivation of medicinal plants is gaining popularity in the region due to geo-climatic suitability of the target area for growth of medicinal plants and higher profitability. Widely cultivated plants include Basok, Chirota, Pathorkuchi, Raktochita, Neem, Ulatkambal, Sharnalata, Ghritakumari etc. The demand of medicinal plant is increasing both in domestic and foreign markets.

3. **Vegetables Cultivation**: Winter and summer vegetables are widely cultivated in the region. Vegetables include mostly spiny gourd (kakrol), beans, cucumber, tomato, bitter gourd (korola), brinjal, okra etc. Women are more comfortable in vegetable gardening or cultivation than in conventional farming of cereal crops.

4. **Fruit Cultivation**: People in the studied area were found enthusiastic in farming of short-term fruits like banana, pineapple and papaya. Commercial hybrid cultivation of papaya (e.g. Red Lady) was recently introduced, which would attract increasing number of value chain actors. Other fruits like amropali, strawberry, dragon fruit and water melon are now drawing farmers' attention.

5. **Tobacco Farming**: In some areas of DDWS, a number of villagers are involved in tobacco cultivation. They get paid in advance for farming tobacco while more other facilities along with greater profitability are offered by tobacco companies. This cultivation affects the forest ecosystems severely in two ways. Cropping of this plant results in fertility loss of the land, and on the other hand, farmers extract a large amount of wood from the forest for burning to heat the tobacco leaves. So, tobacco farming causes more rapid degradation of forest.

6. **Fishing**: Fishing was widely observed in Kaptai Range of KNP, while other ranges lacked in significant number of fishermen.

7. **Fish Farming**: Fish farming is sporadically practiced all over the region. Most farmers are still farming different white fishes through conventional method. Additionally, some of them are recently stocking Tilapia and Pangus in their ponds. In some limited facilities, cage culture of fish was observed in Kaptai lake.

8. **Homestead Poultry**: Majority of the households were found having native chickens or ducks. Homestead poultry helps to meet the protein demand and ensure additional income of the household. However, poultry rearing is risky as chicken are highly prone to contagious diseases. Required vaccines and medicines are not readily available in the region.

9. **Cow Rearing**: A large portion of the beneficiaries in the studied area were found rearing cattle. The rearing of cow or beef-fattening goes upward steeply three months earlier from the Eid-ul-Azha, when the demand of sacrificial cattle reaches at the peak.

10. **Pig Rearing**: Ethnic hilly (non-Bengali) communities in the forest, especially in KNP and in some areas of DDWS, rear pigs for domestic protein consumption. They also sell their pigs during lean period or in any case of emergency.

11. **Fishing Net Making**: A large number of women in the area, especially in Chunati WS, are involved in making and repairing nets for fishing. These nets are collected by intermediaries from door to door and sold at local markets.

12. **Handloom Handicrafts**: Handlooms are usually seen in the ethnic households of the area, where women are engaged in crafting the products. They inherit the traditional skills to make handloom fabrics with a unique form of style. Due to poor market access, the artisans cannot increase their production in spite of having highly potential productivity. Common handloom products are kantha, lungi, saal, gamchha, thaan etc.

13. **Bamboo and Cane Handicraft**: It was seen almost all the over the investigated area. Commonly women keep themselves busy in making different bamboo and cane products in parallel to their daily household chores. The regular products are grain basket, bucket, stools, mats, fans, dala (tray), traps etc. However, due to lack of adequate training facilities, a very few can craft decorative items like flower vase, lamp-shade, ornaments, showpieces, mirror frames, bags, decorative partitions etc.

b) Eligible Value Chains passing cut-off criteria and Justification

Using the cut-off criteria, some value chain activities in which the project has least scope to contribute were eliminated. On the other hand, more than one value chains were merged into a single value chain, as those isolated VCs seemed to have similarity or relevance in terms of existing or potential market systems, practices, actors and further opportunities.

Following table shows the decisions taken at this stage to select eligible value chains.

Table 5: Eligible Value Chains passing cut-off criteria

Preliminary Value Chains observed	Decision taken to select Eligible Value Chains
1. Swidden (jhum) Cultivation	Eliminated from the list
2. Medicinal Plant Cultivation	Merged and jointly selected as an eligible value chain
3. Vegetables Cultivation	
4. Fruit Cultivation	Selected as an eligible value chain
5. Tobacco Farming	Eliminated from the list
6. Fishing	Eliminated from the list
7. Fish Farming	Selected as an eligible value chain
8. Homestead Poultry	Selected as an eligible value chain
9. Cow Rearing	Eliminated from the list
10. Pig Rearing	Eliminated from the list
11. Fishing Net Making	Merged and jointly selected as an eligible value chain
12. Handloom Handicrafts	
13. Bamboo and Cane Handicraft	

So, the eligible value chains passing cut-off criteria are –

1. *Vegetables and Medicinal Plants*
2. *Fruits*
3. *Fish Farming*
4. *Homestead Poultry*
5. *Handicrafts*

Justifications for the elimination of other value chains are tabulated here.

Table 6: Justifications for the elimination of other value chains

Eliminated Value Chains	Justification for Elimination
Swidden (jhum) Cultivation	- It is highly harmful for soil fertility and forest ecosystem - The practice in protected areas (PA) is prohibited
Tobacco Farming	- It severely affect the environment - It encourages massive deforestation
Fishing	- Continuous fishing causes degradation of aquatic biodiversity - Natural broods are being lost
Cow Rearing	- High capital required to attain profitability - Cattle of landless households spoil saplings while grazing in forest
Pig Rearing	- Very low market demand - Outreach is poor

5.3.2 Attractiveness Measure of Eligible Value Chains

In order to measure the attractiveness of the eligible value chains we first look at their prevalence across each site. This was done to ensure the maximum beneficiary outreach. The site wise prevalence of these value chains are shown below:

Table 7: Site wise prevalence of the value chains[3]

Value Chain	Dudhpukuria-Dhopachhori	Chunati-Jaldi	Kaptai-Karnaphuli
Fruits (Papaya, Pineapple, Guava & Amropali)	√	√	√
Vegetables & Medicinal Plants	√	√	√
Poultry	√	√	√
Fish farming		√	√
Handicraft	√	√	√

The scores of each eligible value chain rated in the validation workshop against the criteria and their associated weights are tabulated below.

Table 8: Finding out attractiveness scores for different value chains[4]

Criteria	Weight	Fruits	Vegetables & Medicinal Plants	Homestead Poultry	Fish Farming	Handicrafts
Climate Tolerance	**3**	3	3	3	4	3
Climate Resiliency	**3**	3	3	3	4	3
Resource Extraction Minimization	**5**	3	3	3	2	3
Women and Youth Inclusion	**5**	4	4	4	1	5
Outreach	**2**	3	4	2	2	3
Growth potential	**5**	4	4	3	4	4
Income	**5**	4	3	3	4	4
Private sectors participation	**3**	4	4	2	3	4
Development priorities and favorable policy of government	**3**	4	3	4	4	3

[3] *Primary data: In-depth interviews, FGDs*
[4] *Primary data: In-depth interviews, FGDs and validation workshop*

Synergy and potential collaboration	**3**	2	3	4	4	3
Risk	**4**	2	2	1	2	3
Scope for value addition	**3**	3	3	2	3	4
Total Weightage Score		**146**	**143**	**127**	**133**	**158**

5.3.3 Ranking and Short listing of Value chains

According to the scores earned by the value chains, the selected value chains are ranked below –
Rank 1: Handicrafts
Rank 2: Fruits
Rank 3: Vegetables and Medicinal Plants
Rank 4: Fish Farming
Rank 5: Homestead poultry

Among these the study team finally shortlisted four value chains – ***1) Handicrafts, 2) Fruits and 3) Vegetables and Medicinal Plants***. Outreach of the shorted-listed value chains are tabulated below –

Table 9: Tentative outreach of the shorted-listed value chains[5]

Sites	Dhopachari-Dudpukuria WS		Chunati WS		Kaptai National Park	
Ranges	Dhopachari	Dudpukuria	Chunati	Jaldi	Kaptai	Karnaphuli
No. of VCF	13	19	34	26	22	17
VCF Population	390	534	1810	1485	5000	8910
Current Economic Activities	Agriculture: 80%, Handicraft: 5%, Service: 5%, Daily labor and others: 10%	Agriculture: 70%, Handicraft: 10%, Labor at Rubber garden: 5%, Daily labor and others: 10%, Tobacco farming: 5%	Agriculture: 70%, Handicraft: 20%, Daily labor and others: 10%	Agriculture: 80%, Handicraft: 10%, Daily labor and others: 10%	Agriculture: 60%, Handicraft: 25%, Fishing: 10%, Daily labor and others: 5%	Agriculture: 70%, Handicraft: 20%, Daily labor and others: 10%
Outreach of the shortlisted Value Chains						
Value Chains	Dhopachari-Dudpukuria WS		Chunati WS		Kaptai National Park	
	Dhopachari	Dudpukuria	Chunati	Jaldi	Kaptai	Karnaphuli
Handicrafts	30%	30%	30%	35%	40%	40%
Fruits	15%	10%	10%	10%	10%	15%
Vegetables and Medicinal	55%	60%	60%	55%	50%	45%

[5] *Primary data: beneficiary profiling, in-depth interviews, focus group discussions*

Plants						
	100%	**100%**	**100%**	**100%**	**100%**	**100%**

5.3.4 Rationale for the Final Selection of the Value Chains

Handicrafts

- Potential eco-friendly handicrafts include –
    - Bamboo products (Lai, tukri, basket, mora, dula, kula, fish trap etc.)
    - Handloom products (Kantha, lungi, gamchha, thaan etc.)
    - Fishing nets
- Women are more comfortable in handicraft in comparison to on-farm activities.
- Women have traditional skill to produce handicrafts.
- Requirement of working capital is not very high.
- Due to poor market access, beneficiaries can not increase their production in spite of having highly potential productivity.
- Necessary inputs are available in local markets.
- No land required
- Government is promoting handicrafts and providing trainings and easy loans for the respective trainees.

Fruits

- It includes short-term fruits such as amropali, banana, pineapple, papaya, strawberry, watermelon
- It has no direct impact on Climate, but can positively reduce pressure on forest by engaging the extractors in cultivation
- Cultivation can improve nutrition intake of women; furthermore can be produced in the homestead which would increase potential for inclusion of women beneficiaries under CREL
- Increase in production will create additional jobs for youth across the value chain
- Favorable growth trend; increasing number of farmers getting engaged
- Favorable geo-climatic condition resulting in better produces and better price
- Government is promoting cultivation of different kinds of suitable fruits as saline tolerant crops especially in the coastal regions
- High market demand and stable market price

Vegetables and Medicinal Plants

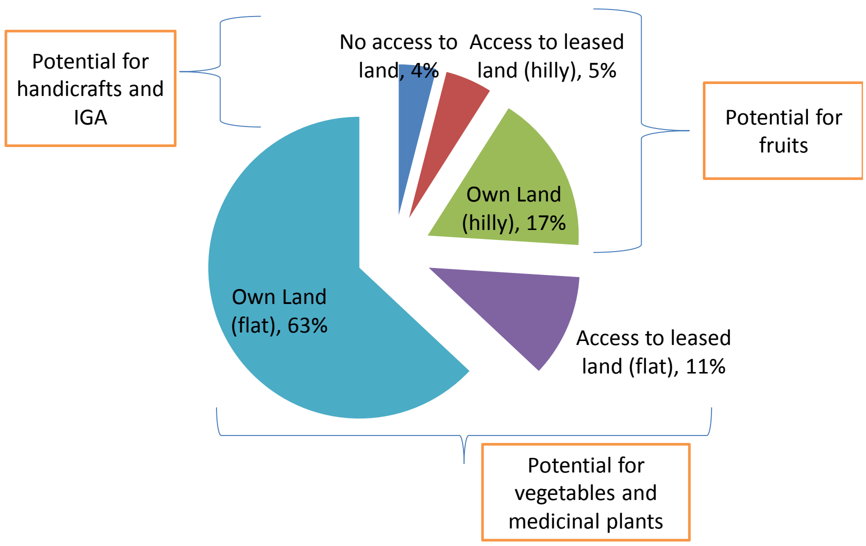
- Winter and summer vegetables are widely cultivated in the region
- Vegetables include mostly spiny gourd (kakrol), beans, cucumber, tomato, bitter gourd (korola), brinjal, okra etc.
- Women are more comfortable in vegetable gardening or cultivation or medicinal plants than in conventional farming of cereal crops.
- Low requirement of working capital
- High market demand
- Early variety vegetables get higher price
- Less irrigation required in comparison to other common crops like paddy, potato etc.
- Improved packaging can increase value addition opportunity
- It has no adverse impact on environment
- Market demand and profitability of medicinal plants are very high.
- Cultivation can be incorporated in the Social Forestry using the same land, as the medicinal plants can grow under shade.
- Along the embankments and in relatively arid soil, medicinal plants can easily be grown.
- It can be cultivated in homestead lands and also as fencing of other crop fields.

Chapter 6: Beneficiary Outreach and Other Trades

5.1 Outreach

Based on the beneficiary profiles we have from the project database, along with the information collected during the value chain assessment study, an overview of the beneficiaries have been mapped out as the following diagram shows:

Figure 10: Outreach Segmentation[6]



Accordingly, the different value chains will be targeting the different types of beneficiaries. Thus, potential outreach for the different value chains will differ and in some cases overlap.

Table 10: Potential Outreach for Vegetables and Medicinal Plants[7]

D-D WS	Chunati WS	Kaptai NP
No. of target beneficiaries: 758	No. of target beneficiaries: 2701	No. of target beneficiaries: 1541
Potential Outreach: 82%	Potential Outreach: **85%**	Potential Outreach: **70%**
Overall Potential Outreach: 80%		

[6] *Primary data: beneficiary profiling*
[7] *Primary & secondary data: beneficiary profiling, in-depth interviews, FGDs, project documents*

Considerations for Outreach Estimation		
▪ **Currently 80% beneficiaries are involved in the VC.** ▪ **90% beneficiaries have average 32 decimal of land.** ▪ **Soil is very fertile** ▪ **Homestead spaces are available** ▪ **High unmet regional and national demand** ▪ **Scopes for potential upgrade of culture practices and trading efficiency**	▪ Currently 78% beneficiaries are involved in the VC. ▪ 65% beneficiaries have average 15 decimal of land. ▪ 15% beneficiaries have access to leased land ▪ Soil is very fertile ▪ Homestead spaces are available ▪ High unmet regional and national demand ▪ Scopes for potential upgrade of culture practices and trading efficiency	▪ Currently 67% beneficiaries are involved in the VC. ▪ 75% beneficiaries have average 13 decimal of land. ▪ 20% beneficiaries have average 140 decimal of forest land ▪ Homestead spaces are available ▪ High unmet regional and national demand ▪ Scopes for potential upgrade of culture practices and trading efficiency

Table 11: Potential Outreach for Fruits[8]

D-D WS	Chunati WS	Kaptai NP
No. of target beneficiaries: 758	No. of target beneficiaries: 2701	No. of target beneficiaries: 1541
Potential Outreach: 33%	Potential Outreach: **32%**	Potential Outreach: **25%**
Overall Potential Outreach: 30%		
Considerations for Outreach Estimation		
• Currently 25% beneficiaries are involved in the VC. • 90% beneficiaries have average 32 decimal of land. • Soil is very fertile • Homestead spaces are available • High unmet regional and national demand • Scopes for potential upgrade of culture practices, post-harvest techniques and trading efficiency	• Currently 27% beneficiaries are involved in the VC. • 65% beneficiaries have average 15 decimal of land. • 15% beneficiaries have access to leased land • Soil is very fertile • Homestead spaces are available • High unmet regional and national demand • Scopes for potential upgrade of culture practices, post-harvest techniques and trading efficiency	• Currently 22% beneficiaries are involved in the VC. • 75% beneficiaries have average 13 decimal of land. • 20% beneficiaries have average 140 decimal of forest land • Homestead spaces are available • High unmet regional and national demand • Scopes for potential upgrade of culture practices, post-harvest techniques and trading efficiency

[8] *Primary data: beneficiary profiling, in-depth interviews, FGDs*

Table 12: Potential Outreach for Handicrafts and Handloom[9]

D-D WS	Chunati WS	Kaptai NP
No. of target beneficiaries: 758	No. of target beneficiaries: 2701	No. of target beneficiaries: 1541
Potential Outreach: 33%	Potential Outreach: 27%	Potential Outreach: 35%
Overall Potential Outreach: 30%		
Considerations for Outreach Estimation		
• Currently 22% beneficiaries are involved in the VC. • Homestead spaces are available • High unmet regional and national demand • High interest and inherited traditional skill of women in handicrafts • Scopes for potential upgrade of crafting practices, processing, finishing, product diversification and trading efficiency	• Currently 17% beneficiaries are involved in the VC. • Homestead spaces are available • High unmet regional and national demand • High interest and inherited traditional skill of women in handicrafts • Scopes for potential upgrade of crafting practices, processing, finishing, product diversification and trading efficiency	• Currently 25% beneficiaries are involved in the VC. • Homestead spaces are available • High unmet regional and national demand • High interest and inherited traditional skill of women in handicrafts • Scopes for potential upgrade of crafting practices, processing, finishing, product diversification and trading efficiency

5.2 Other Trades

The planned outreach through selected value chains remains confined to a major portion of the total outreach. To involve the outlying beneficiaries, we suggest some other trades as income generating activities (IGA).

(i) **Small Scale Poultry:** For households with little homestead land, small scale poultry can be a possibility. The chickens can be reared in the homestead areas using semi-intensive techniques to ensure high profitability. The chickens need to be fed and can be sold at any point as they grow. They can also be reared for eggs which can be consumed at home and also sold to others in and around the localities.
Interventions for this will have to look into establishing both the backward and the forward markets for this value chain. Also, this value chain will have to be specific to households who have the space to rear poultry, and who can invest into this business.

(ii) **Small Scale Fisheries:** For households with small homestead ponds, small scale fisheries can be a potential to generate additional income. Semi-intensive techniques with specific stocking can be used to have polyculture fish production. Also, green water can be used to reduce the cost of fish feeds and thus increase profitability.

(iii) **Tailoring:** Most of these project regions are not easily accessible from towns and thus has a huge demand for services like tailoring. Traditionally, women are involved in weaving and clothes related work in the home. Landless women can easily be in engaged in these kind of trade since they can get involved in it while staying at home. Interventions

[9] *Primary data: beneficiary profiling, in-depth interviews, FGDs*

need to be designed to ensure capacity development, facilitate linkage with traders, financial institutes and beneficiary groups.

(iv) **Eco-friendly Stove Entrepreneurial Endeavors:** Eco-friendly stoves are widely used in these regions by most households and the trend is growing. The current trend indicates that the suppliers/sellers of the stoves take care of the repair and maintenance of the stoves. Therefore, it can be expected that this will in turn create a demand for such manpower for servicing and repairing of these stoves. Interventions will include providing training to some individuals from each area, targeting the landless youth, who can establish themselves in this business.

Part III: Value Chains Analysis for Southeast Region 1(Chittagong, Rangamati)

Chapter 7: Value Chain Analysis of Southeast Region1

7.1 Regional Overview

The South East Region 1 of the project's targeted geographic area consists of sites in Chittagong, Rangamati and a part of Cox's Bazaar districts. The topography of the area is diverse with hilly lands, plains and low lands. The soil and water of the region is enriched with enormous biodiversity in respect of both flora and fauna.

The region includes the second most intense location for business activities which is the Chittagong metropolitan area. Also the presence of the Chittagong harbor, one of the most active sea ports of the country, international trades are flown through the area. However, large portions of the population, especially those who are located in the protected areas, are for the most part depended on extraction of natural resources like wood and bamboo from the forests. The study covered the Wildlife Sanctuaries in Chunati, Jaldi, Dhopachhori, Dhudhpukuriya and Kaptai-Karnafuli. The forests are diminishing in these areas at an alarming rate which illustrates high need of ecosystem resilient value chains in these areas. A broad division shows that 3% of the inhabitants in the project areas are completely dependent on extraction from the forests. Whereas, a total of 62% are dependent of the natural resources extracted from the forests (moderate 30% and low 32%). This troublingly high dependence rate on natural resources calls for introduction and expansion of alternative climate resilient livelihood activities to open the deadlock of the economic situation of these beneficiaries. These activities include vegetables, medicinal plants and fruits cultivation to lever the traditional economic activity of the beneficiaries with low to moderate dependence on the forests. Moreover, handicrafts and handlooms have been added because of the heritage the region carries for centuries to cash from the scenic natural beauty found in the wilderness of the region.

Chapter 8: Value Chain analysis for Vegetable & Medicinal Plants

8.1 Brief Overview

Vegetable is a growing market in the Chittagong region. There is a strong trend of vegetable cultivation in the project regions which cater to not only the local demand, but is also exported to the divisional market and even to the national level markets. In these regions, vegetables are cultivated all around the year, with lower investment than is required for cash crops like paddy and has very high profitability. Some of the most commonly grown vegetables in this region include brinjal, gourds (teasle, bitter, snake, etc.), chili, potato, bean, tomato, okra, bitter gourd pumpkin etc. With proper use of cultivation techniques, better inputs and better packaging for marketing, there is a huge potential to increase the productivity of vegetables in these regions.

There is a huge supply gap of medicinal plants nationally in Bangladesh. Medicinal plants require very little production cost and have a very high profitability; they can also be grown on arid lands, homestead and even as fencing with other crops. There is a trend in these regions where medicinal plants like neem, basak, amloki, haritoki and aloe vera are grown by many households and farmers. The production of these medicinal plants can be expanded horizontally to increase productivity.

Rationales for choosing Vegetables as a value chain:

- Vegetables are widely cultivated in the region all year round
- Women are more comfortable in vegetable farming than in conventional farming of cereal crops
- Low requirement of working capital
- High market demand
- Early variety vegetables get higher price
- Less irrigation required in comparison to other common crops like paddy, potato etc.
- Improved packaging can increase value addition opportunity
- It has no adverse impact on environment

Rationales for choosing Medicinal Plants as a value chain:

- Market demand and profitability of medicinal plants are very high
- Cultivation can be incorporated in the Social Forestry using the same land, as the medicinal plants can grow under shade
- Along the embankments and in relatively arid soil, medicinal plants can easily be grown
- It can be cultivated in homestead lands and also as fencing of other crop fields

The cost benefit analysis of various vegetables and medicinal plants show the differences between average profits per decimal for same crops on various sites, which in turn indicates the most suitable crops for each site.

A site specific cost benefit analysis of vegetables is given in the table below for Chittagong Region. The vegetables that are covered in the analysis are the most prominent ones in terms of popularity and higher profit.

Table 13: Site Specific Cost Benefit Analysis for Vegetables[10]

Sl.	Crop/Species	Lease Cost / Decimal	Field Preparation Cost/ Decimal	Seed Cost/ Decimal	Fertilizer Cost/ Decimal	Pesticide cost/ Decimal	Labor cost / Decimal	Transport and other costs / Decimal	Average Total Cost / Decimal	Average Yield (kg)/ Decimal	Average Revenue/ Decimal	Average Profit/ Decimal
South East Region 1 (Chittagong) – Site: Chunati												
1	Brinjal	112	125	265	193	513	281	98	1,587	247	4,699	3,112
2	Gourd	100	55	18	78	71	78	35	435	35	730	295
3	Chili	60	47	88	124	100	167	50	634	23	2,268	1,634
4	Potato	115	86	129	286	83	395	99	1,193	66	1,214	21
5	Bean	112	99	65	118	85	120	54	653	93	4,018	3,365
6	Tomato	145	170	165	415	253	368	375	1,891	540	18,914	17,024
7	Okra	142	83	60	259	109	369	208	1,229	69	1,511	282
8	Bitter Gourd	31	13	50	73	108	154	164	593	26	902	308
9	Pumpkin	50	63	35	213	88	95	68	610	60	1,185	575
South East Region 1 (Chittagong) – Site: Jaldi												
1	Brinjal	162	108	163	139	241	185	70	1,067	258	6,438	5,370
2	Chili	120	66	133	211	124	261	83	999	155	4,650	3,651
3	Potato	128	67	142	240	90	320	96	1,083	83	1,650	568
4	Kakrol	107	46	158	255	356	572	530	2,025	61	2,419	394
5	Cucumber	139	117	84	131	136	63	118	787	158	4,856	4,068
South East Region 1 (Chittagong) – Site: Dhopachhori												
1	Brinjal	170.00	65.00	38.00	118.80	95.40	265.00	22.00	774.20	55.10	1,042.00	267.80
2	Gourd	170.00	50.00	11.00	52.80	27.40	142.00	15.00	468.20	44.90	930.00	461.80
3	Chili	140.00	55.17	78.33	80.47	59.73	231.67	12.67	658.03	26.20	1,650.00	991.97
4	Potato	140.00	56.00	67.00	76.30	30.90	193.00	11.50	574.70	61.00	1,120.00	545.30
5	Bean	160.00	55.00	50.17	89.57	74.70	271.67	8.42	709.52	37.33	1,455.00	745.48
6	Taro	120.00	69.17	53.50	69.68	14.05	124.50	24.17	475.07	46.77	843.33	368.27

[10] *Primary data: cost benefit analysis*

7	Tomato	140.00	60.00	55.67	87.60	65.80	149.33	22.67	581.07	64.40	1,872.00	1,290.93
8	Okra	75.00	54.67	21.67	54.00	26.00	48.00	23.67	303.00	21.67	406.67	103.67
9	Bitter Gourd	180.00	61.79	55.29	75.71	55.21	164.29	16.36	608.64	34.31	704.86	96.21
10	Pumpkin	130.00	62.67	26.67	85.00	42.00	131.67	31.67	509.67	50.00	990.00	480.33
South East Region 1 (Chittagong) – Site: Dudhpukuriya											
1	Brinjal	163	93	21	275	123	326	43	1,044	113	3,098	2,055
2	Potato	83	72	169	100	46	107	21	596	71	1,535	939
3	Bean	89	43	11	98	54	99	25	418	71	2,657	2,239
4	Okra	97	82	12	110	55	158	32	546	61	1,800	1,254
5	Bitter Gourd	145	372	29	140	88	95	28	896	72	2,694	1,798
South East Region 1 (Chittagong) – Site: Kaptai & Karnafuli											
1	Brinjal	-	25.86	20.88	13.68	11.31	28.63	16.21	116.57	10.84	363.83	247.26
2	Potato	-	46.00	43.00	33.00	9.50	24.00	12.00	167.50	21.93	438.50	271.00
3	Bean	-	33.00	13.97	19.17	13.17	13.50	20.33	113.13	11.75	321.25	208.12
4	Taro	-	35.50	44.00	23.17	9.17	23.17	17.17	152.17	9.70	318.67	166.50
5	Bitter Gourd	-	39.33	16.00	12.17	14.17	30.00	17.83	129.50	13.58	434.17	304.67

The site specific cost benefit analysis of medicinal plants is given below:

Table 14: Site Specific Cost Benefit Analysis for Medicinal Plants[11]

Sl.	Crop/Species	Lease Cost / Decimal	Field Preparation Cost/ Decimal	Seed Cost/ Decimal	Fertilizer Cost/ Decimal	Pesticide cost/ Decimal	Labor cost / Decimal	Transport and other costs / Decimal	Average Total Cost / Decimal	Average Yield (kg)/ Decimal	Average Revenue/ Decimal	Average Profit/ Decimal
	South East Region 1 (Chittagong) – Site: Jaldi											
1	Neem	-	492	238	238	259	885	238	2,350	78	3,488	1,138
2	Haritoki	-	636	261	260	-	1,009	334	2,500	98	3,900	1,400
3	Amloki	-	751	227	262	-	1,342	318	2,900	100	8,000	5,100
South East Region 1 (Chittagong) – Site: Kaptai & Karnafuli												
1	Neem	-	21.50	10.50	11.50	10.75	58.50	14.50	127.25	5.45	327.00	199.75
2	Basak	-	21.85	15.25	10.72	12.60	49.80	16.85	127.07	18.25	547.50	420.43
3	Haritoki	-	16.08	9.00	7.32	-	29.00	15.50	76.90	3.43	171.67	94.77
4	Aamloki	-	18.10	8.80	7.45	-	37.90	13.60	85.85	5.40	294.40	208.55

[11] *Primary data: cost benefit analysis*

8.2 End Market Analysis

8.2.1 Main Market, Buyers &Competition

Vegetables*:* The end market for vegetables in the region is reasonably diverse with the consumers ranging from private households of various income groups to restaurants. As the consumption pattern of various income levels is fairly similar, no segregation in such manner has been done. However, the consumers of vegetables can be segregated, by the geographic location of purchase, into three levels – a) local bazaar or village level, b) regional level which includes Chittagong Metropolitan City and c) outer region level that is consumers in other districts.

About 15% of the vegetables that are produced locally are consumed by people attending the local bazaars situated close to farms in the villages. As the local arotdars also retail 70% of their traded volume directly to consumers, the rest 30% comes through local vegetable retailers. The consumption pattern reveals that the average daily consumption composition is shaped by the locally available vegetables. Rarely vegetables from distant villages reach these markets.

The regional level consumers buy the vegetables for consumption from the regional bazaars that are larger and are more diversified in terms of availability of items than local bazaars. Their consumption composition demonstrates a broader range of vegetables due to a variety of sources from within the region including the ones that come from other districts. According to the study, 78% of the vegetables produced in the program areas are consumed at this regional level. The end consumers buy almost all of it from vegetable retailers situated in regional level markets like Reazuddin Bazaar, Bahaddarhat Bazaar etc. in Chittagong metropolitan area. The reason behind this large portion is the population density of the metropolitan area and the presence of many restaurants of different sizes.

The outer district level receives the rest 7% of vegetables produced in the program areas.

Medicinal Plants*:* The end market of medicinal plants is essentially segregated into two levels: a) regional and b) national. The extracts from the medicinal plants travel through the value chain to reach the herbal medicines producers which in turn reaches the consumers throughout the country. The household usage of extracts from medicinal plants compared to consumption as herbal medicine, it is considered to be negligible and not accounted for in this consumption calculation. Moreover, as per market study, 95% of the extracts of medicinal plants that are consumed as herbal medicines are imported from India, Pakistan and China.

Among the total produced extracts of medicinal plants from the program areas in Chittagong, Rangamati and a small part of Cox's Bazaar, nearly 30% goes to local herbal medicine producers at the regional level and 18% goes to the national level herbal medicine producers. The national level consumers acquire their products from national level herbal medicine producers, which represent nearly 53% of the total products extracted from medicinal plants cultivated in these program areas.

8.2.2 Demand-Supply Situation

There is a significant demand-supply gap in the market. The big vegetable bazaars in the regional levels shows a 20% gap in demand which is currently not being met. Moreover, the regional level bazaars represent a good 78% of consumption of vegetables produced in the program areas of the region and at least 40% of the vegetables available in the regional level bazaar come from outside the district. The presence of high consumption vegetables like potato, bean, gourd and brinjal from far away locations of the north-west part of the country (Bogra, Dinajpur, and Rangpur) shows a potential gap in the regional production. As per the analysis, the local production of vegetables in the program areas can be increased up to 30% without making an impact on the current price.

The medicinal plants market illustrates a completely different scenario. The presence of herbal medicine producers in the market indicates a steady demand for extracts from medicinal plants throughout the year. Currently the demand is being met by imported processed extracts from India, Pakistan and China which represents about 95% of the consumption in the local herbal medicine market. However, all of the rest 5% are locally produced and processed extracts from within the region. As a result, the demand-supply gap is huge and can be met with a large increase of current commercial production.

8.2.3 Market Opportunities

The market opportunity for vegetables and medicinal plants is well drafted by the soil nature. The soil in this region is highly fertile and favorable for vegetables and medicinal plant production. Assessing the capacity, it is seen that at least 75% of beneficiaries have cultivable land and cultivable land is also available for leasing which directs towards a potential expansion of the production to meet the yet unmet demand.

Traders are well-connected with regional and even national markets. So, with increased supply of vegetables, the opportunity for vegetable traders will increase. The inclusion of women in the vegetables value chains can potentially increase the productivity per household and at the same time can generate income through economic activities.

8.3 Value chain map and analysis of value creation activities

The value chain map has been based on the data collected from the market actors in the project regions, including input retailers, input companies, producers, traders, government officials, etc.

8.3.1 Value Chain – Vegetables Sector Overview

The vegetables value chain starts with the input supply function where the agro input retailers and mobile seed sellers play the role of supplying the input. 25% of the inputs go from Input Retailers to Mobile Seed vendors.

From the production level, the strongest channel to the end consumers is through the Commercial Large Producers, Regional Farias, Divisional Arotdars and Regional Level Vegetable Retailers. The commercial large producers mostly sell their products to regional level Farias because these Farias have the capacity to purchase in bulk and can reach the regional level big bazaars like Reazuddin Bazaar and Bahaddarhaat Bazaar. This ensures the large producers' production to reach the end consumers at the regional level.

Business Environment – Underlying Factors

The following underlying factors helped shape the vegetables value chain to functioning the way it acts:

Perishability & Seasonality

Like most farming items, vegetables are occasional by nature and perishable. Notwithstanding, it must be noted that vegetables are much more perishable with much shorter timeframe of realistic usability than other agro items like say rice or maize. Vegetables show staining, softening and unsold inside 24 hours of harvest and does not last more than 3 days at most. This short timeframe of realistic usability implies ranchers have an extremely constrained window of time available to be purchased of their item.

During pick season, the vegetable markets have an exceedingly unstable nature in spite of the wide adequacy and interest. Throughout crest season, a vast supplies of the item overabundances the business sector; which must be cleared in a brief opportunity to their high perishability. This prompts quick fall in costs. Thusly, as the season closures, supply falls and value climbs in like manner.

Price Determinants: Freshness, Form

Most of the vegetable produced in Chittagong hill tracts areas are marketed in Chittagong divisional markets. The paikers or collectors from Chittagong division purchased the produced vegetables from major local markets of Rangamati, Bandorban and sells through the divisional arots in Chittagong. So, freshness cannot be hold up to arots which affects the price.

On the other hand, inclusion of more actors in each value chain also reduces the profitability of the vegetable producers. All the actors want to ensure the profitability for themselves. Finally this affects the profitability of the core vegetable producers.

Transportation

The transportation cost is also major factors in the vegetable market of Bandorban and Rangamati. High transportation cost reduces the profitability to maintain the price of vegetable in text of national vegetable market price. Local consumption of the vegetable is very negligible in compare to production in these areas. So price highly affected by the high transportation cost.

Political Situation

Due to adverse political situation, the vegetable cannot be transferred in end market on time always. Although vegetable is a perishable product, sometimes it also becomes inconsumable due to hortal, strikes. So the middle men have to face loss for adverse political situation.

8.3.2 Description of Value Chain Actors, Functions and Map

Input suppliers

Input Suppliers steady of retailers of Seeds, composts and insecticide/pesticide. The retailers range from little retailers in nearby markets to extensive saves – cum – wholesalers who offer to huge business ranchers and have solid relations with bargains delegates of substantial organizations. There are no particular data suppliers for vegetable inputs alone, rather for horticultural inputs by and large. Close local centers like Banglahalia Bazaar, Dhopachori and Chittagong, retailers had wide determination and fantastic foreign mixed bags of seeds. In manure, concoction manures were exceedingly pervasive; however micro-supplements were frequently not sold at little nearby retailers – who are the real suppliers for the focused on beneficiaries

Vegetable Producers

There are two types of vegetable producers. These are large and small vegetable producers. Vegetable farmers are the focused on beneficiaries, answerable for developing the vegetables. Our assessment parts these aggregations into two, as per their preparation volume and goal. The essential beneficiary aggregation is made up of residence plant specialists, who take after subsistence- level cultivating without business concerns or speculation capability. They are generally associated with little retailers in neighborhood markets. Next are little business agriculturists who chip away at grounds more modest than 60 decimals. These agriculturists have begun to understand the profits of marketed vegetables and began on their own. These may be the most favored group of ranchers in this study as they are ready and equipped for market. Then again, absence of business encounters and scale-up practices lead to last item under performed in the bigger markets. Finally, there are bigger business ranchers who utilize more than 60 decimals and point for wholesale markets as opposed to little neighborhood market retailers. They have a favored association with input suppliers.

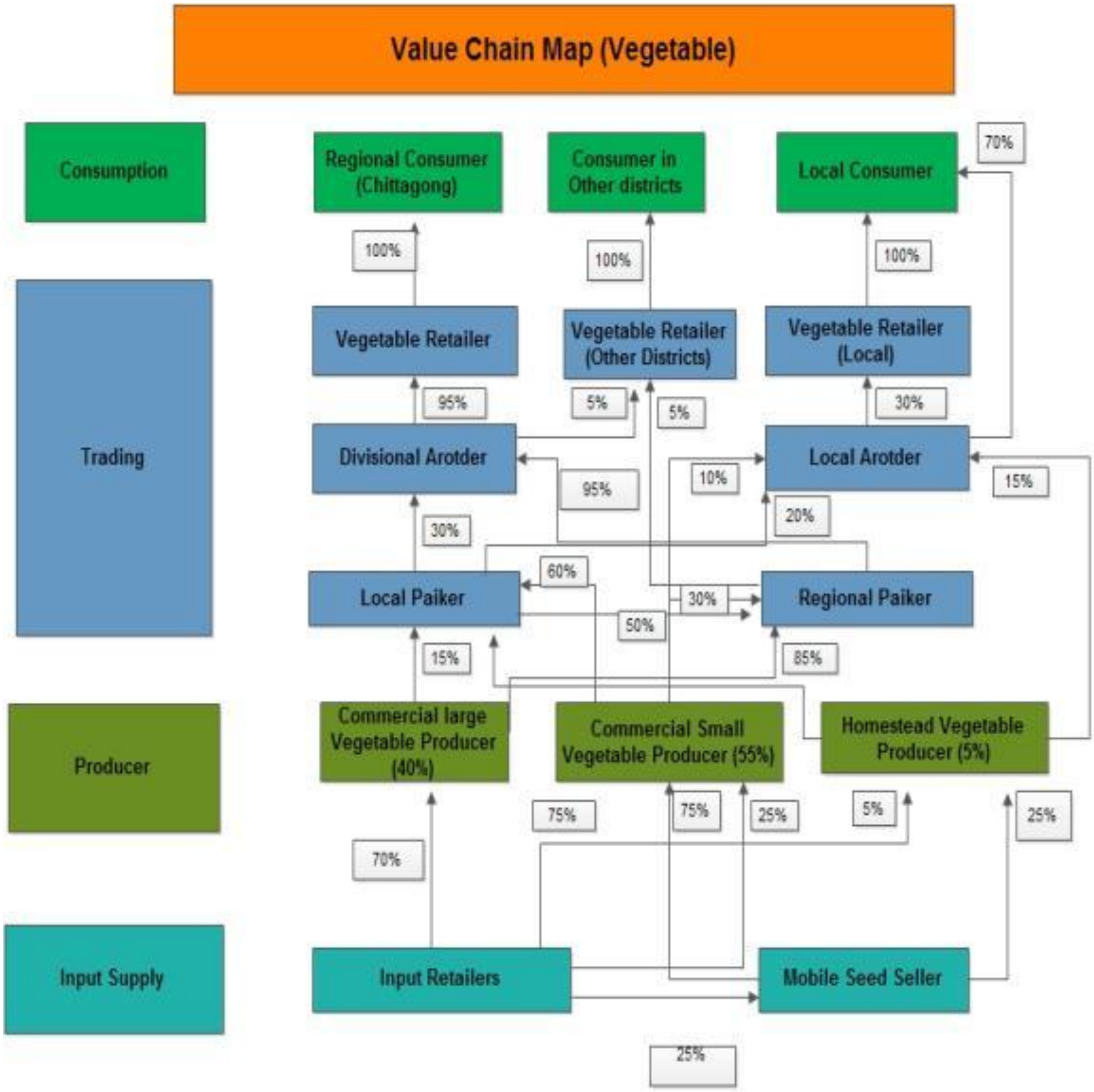
Trading

The most important part of value chain function is trading the vegetables in diverse market. The trading function has different on-screen characters hinging upon the volume of vegetables they move around. Firstly, there are Forias or authorities who gather vegetables from numerous little agriculturists and re-offer the entire mass to divisional market. They benefit from funds on transportation expense of mass deals. They likewise acquire vegetables from real area bazaars to nearby bazaars. The nearby retailer has the strongest association with the beneficiaries as well as divisional markets. They serve both as the business sector for offering by little farmers and likewise for purchasing vegetables as buyers when neighborhood creation is inadequate. . For somewhat bigger volumes furnished by little business ranchers, the favored connection is with nearby requisition wholesalers. These brokers don't in fact possess the item. Rather, they hold the item overnight and offer it to retailers and wholesalers in different zones and keep 10%-15% of deals cost as requisition. For huge business deal, the exchanging channel achieves up to region level wholesalers who shift the items around the district and inside little markets in the locale. All these exchanging cumulates at the divisional wholesalers who join the territorial markets with the national markets, accumulating vegetables from outside hill tracts districts and sending overabundance vegetables to Chittagong and different districts; in spite of the fact that it happens with a generally little volume as the area is basically supply inadequate.

End Market or End Consumer

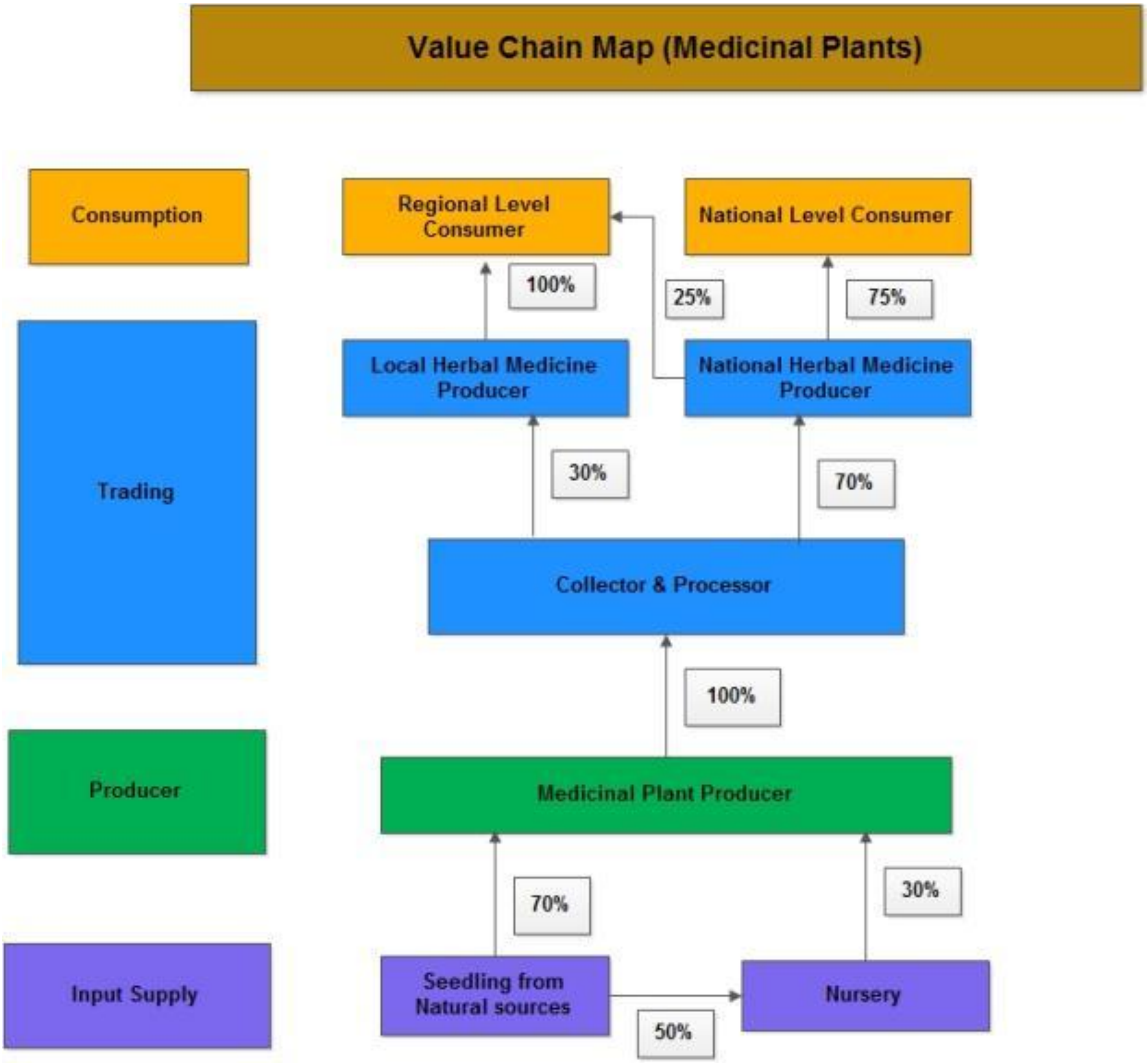
The end market for vegetables in the region is reasonably diverse with the consumers ranging from private households of various income groups to restaurants. As the consumption pattern of various income levels is fairly similar, no segregation in such manner has been done. However, the consumers of vegetables can be segregated, by the geographic location of purchase, into three levels – a) local bazaar or village level, b) regional level which includes Chittagong Metropolitan City and c) outer region level that is consumers in other districts.About 15% of the vegetables that are produced locally are consumed by people attending the local bazaars situated close to farms in the villages. As the local arotdars also retail 70% of their traded volume directly to consumers, the rest 30% comes through local vegetable retailers. The consumption pattern reveals that the average daily consumption composition is shaped by the locally available vegetables. Rarely vegetables from distant villages reach these markets.The regional level consumers buy the vegetables for consumption from the regional bazaars that are larger and are more diversified in terms of availability of items than local bazaars. Their consumption composition demonstrates a broader range of vegetables due to a variety of sources from within the region including the ones that come from other districts. According to the study, 78% of the vegetables produced in the program areas are consumed at this regional level. The end consumers buy almost all of it from vegetable retailers situated in regional level markets like Reazuddin Bazaar, Bahaddarhat Bazaar etc. in Chittagong metropolitan area. The reason behind this large portion is the population density of the metropolitan area and the presence of many restaurants of different sizes.The outer district level receives the rest 7% of vegetables produced in the program areas.

Figure 11: Value Chain Map (Vegetables)[12]



12 *Primary data: in-depth interviews, questionnaire survey*

Figure 12: Value Chain Map (Medicinal Plants)[13]



13 *Primary data: in-depth interview, questionnaire survey*

8.4 Value Chain Performence

8.4.1 Performance of the Value Chain

The performance of the value chain is discussed by the following table:

Table 15: Value Chain Actors and Performances

	Input Supply	Production	Trading	Support services
Actors	Agro Input Retailers, Mobile Seed Sellers	Commercial Large Producers, Commercial Small Producers, Homestead Vegetables Producers	Local Farias, Regional Farias, Local Arotdars, Divisional Arotdars, Vegetable Retailers (Regional), Vegetables Retailers (other districts), Vegetable Retailers (local)	Transportation, Agricultural Labor
Functions	▪ Selling seeds of various vegetables and medicinal plants ▪ Selling fertilizers, vitamins, pesticides, ▪ Providing information about proper amount and timing for using seeds, fertilizers, pesticides, medicines and other agro input	▪ Cultivating vegetables and medicinal plants at homestead level and at small and large commercial levels ▪ Selling vegetablesa nd medicinal plants to various actors in 'trading' roles in the local and regional bazaars	▪ (Local and Regional Farias) Collecting products from commercial farmers and from remote areas ▪ Takes the products to Local and Divisional arotdars and sells tothemin exchange fora commission ▪ Bears the transport cost ▪ Undertakes the risk of products to remain unsold or to be sold at a lower price ▪ (Local and Divisional Arotdars) Collects and exhibits products both from Farias and farmers ▪ Sells products to retailers and consumers ▪ Takes sales commission	▪ Providing carrying and transport facilities to the traders and farmers
Performanc	▪ Demand for	▪ For	▪ Paikers and	▪ Dilapidated

e (-)	packet seed is higher than open seed because of high yield ▪ Knowledge only about the proper usage of agro inputs acquired from agro input companies is not sufficient to ensure high quality and yield	homestead and small commercial farmers the cultivation technique is traditional and the yield is lowerthan the standard ▪ Proper usage of modern scientific technology is lacking ▪ Lower production defies the economy of scale ▪ Because of the naturally fertile soil the farmers put minimum effort thus getting low yield	Farias do not use shared transport which can decrease their costs	roads increase the risk of wastage of carried products as it takes longer time ▪ High cost of transport adds to the value of the vegetables
Performance (+)	▪ Availability of all kinds of seeds and other agro inputs ensures variety of vegetables to be cultivated ▪ The mobile seed sellers reach the remote areas to distribute seeds	▪ Peak season production is high ▪ Better quality (healthy and tasty) vegetables engross higher demand in the regional markets	▪ Access to information about prices is strong	▪ Availability of the transport and porters help reduce the effort of the Farias

Value Chain performance investigated above on their actors and their functions revealed some strengths and weaknesses of the vegetable a value chain to impact the beneficiaries. Further analyses of factors affecting the chain as a whole are given below:

8.4.2 Business Enabling Environment

By and large, we uncovered the business environment inside the locale to be helpful to business development. There is exceptional accessibility of both info suppliers and business sector on-screen characters. The test stays inside the preparation level as numerous makers and particularly the focused on beneficiaries are fulfilled by their subsistence cultivating strategy, unwilling to hazard the speculation behind business up scaling. There have all the earmarks of being an in number society of going abroad as modest labor and send back profit as settlement. This social reliance on remote wage brings about absence of exertion on some piece of the adolescent to participate in building organizations here.

Major regions of the district like Rangamati and Bandorban have all the earmarks of being quite moderate and don't see women working and working outside with other men, in a positive light. These qualities lead to a framework where notwithstanding the supply-insufficiency and inclination for fresher neighborhood vegetables, the agriculturists have not extended their practices.

8.4.3 Vertical Linkages

Vertical linkage among vegetable-producing beneficiaries in Chittagong Region is moderate. As earlier mentioned they are unwilling to take the risk of expanding their production both in volume and also level of business. Some beneficiaries in Dudhpukuria and Dhopachori, who were large farmers, work both as producers and retailers. They sell the main bulk of their produce to large wholesalers and some leftover is sold at the local market where they act as retailers themselves. However, that volume is limited to a single basket of vegetables at best. The most likely reason is that both sites were near Bangalhalia Bazar, Lichubagan and Chittagong respectively, which are the regional business hubs with the largest vegetable markets.

The linkage in the trading arena is stronger as the same wholesaler can function as a local, district-level or regional wholesaler depending on his current volume of business. Information flows faced problem due to linke with major markets, absence of local extension service

8.4.4 Horizontal Linkages

Horizontal linkages around beneficiaries were available in some frail structures. For the most part, the beneficiaries have been a piece of an assembly under previous venture and there is a level of communication, though casual in nature. At the exchanging level of cooperation & rivalry are both high. This might be seen on the grounds that each business sector, at neighborhood, area and territorial level, all have a type of companionship which directs the operation of the commercial center. Nonetheless, they don't impact the every day estimating in any case. This means the business sector performing artists are profoundly focused; in both costs and quality. As the area is all in all subject to vegetables originating from outside the district, the retailers have a sharp cognizance of the source and benchmark of value that might be given in the business sector. In any case, these exchanging performers want to work with substantial agriculturists as they are steady and proficient. Focused on beneficiaries can't access these performing artists and stick to neighborhood markets. In Dudhpukuria, Dhopachori and few different destinations, we found pervasiveness of Forias or collectors/travelling wholesaler who work with 3-4 agriculturists as one assembly.

8.4.5 Scopes for Upgrading

Input Supply: Input retailers are very closely connected with the vegetable and medicinal plant producers. For better yield, farmers primarily depend on the input retailers' suggestions. This relation can be reinforced through developing the knowledge of the input retailers. The project can collaborate with existing and potential input companies (seed, agro-chemicals, fertilizers, etc.) and work for the capacity development of the local input suppliers on appropriate techniques and better practices in vegetables and medicinal plant cultivation. Input sellers ultimately would disseminate the knowledge on better farming technology, right use of fertilizers and agro-chemicals to the producers as embedded service.

Several input companies are already operating their marketing channels in the project areas. Interventions partnered with these companies can be the most influential effort to improve the overall efficiency of the backward linkage of the value chain. Bangladesh Agricultural Research Institute

(BARI), horticulture expert/ institution and other potential agro-research entities can be collaborated to provide necessary knowledge and technical know-how on selection of appropriate inputs and judicial usage of those for higher yield and profitability.

Production: Most of the farmers in the study area cultivate applying the traditional approaches and techniques due to limited access to information and scarcity of training facilities. However, there is enough scope for adopting new technologies and modern practices to increase the production of vegetables and medicinal plants.

Suitable cropping pattern with a selection of certain early variety of vegetables and intercropping technologies can allow higher production. Improved summer varieties of traditional winter vegetables may add further profits and more availability of the produces. For example, BARI Hybrid Tomato-4 and BARI Begun-8 were successfully grown during summer and monsoon. Other profitable varieties are BARI Seem-1, BARI Jhar Seem-1, BARI Lau-2, Capsicum (advanced line), etc. To fight climate change affects such as heavy rainfall or flood, the hydroponic lettuce and capsicum may be effective compensation to the potential loss.

In different experiments conducted by BARI, effect of pruning and spacing of summer tomato production showed that the treatment combination of 60 cm x 40 cm plant spacing along with 3 stems produced the highest yield. In the study of influence of grafting on summer tomato revealed that tomato grafted with BARI Begun-8 was best in terms of yield. In a screening of different tomato varieties in the saline areas, BARI Tomato-14, BARI Hybrid Tomato-5, and BARI Tomato-2 gave consistently better fruit yield under normal salinity.BARI revealed that fertilizer management in hybrid maize-mukhikachu relay cropping would be economically profitable while another study of intercropping okra with leafy vegetables showed that 100% red amaranth with okra was found to be the most suitable for higher yield and economic return. Intercropping vegetables (Lalshak and spinach) and ginger with pointed gourd under relay system was found profitable.

There are many other such scope for adopting modern agro-technologies and better practices to increase the profitability of the producers and make the value chain more efficient and sustainable.

Trading: Formation of the producers' group may potentially strengthen the bargaining capacity of the producers. In the production of medicinal plants, the collective effort may allow producers to overcome the hurdles of processing and transportingtheir produce. Capacity development initiatives for the existing traders and better linkage with the producers will create a more structured channel of procurement and distribution that can cater to a niche market.

8.5 Value Chain Governance

The whole chain is generally impacted by merchants, particularly the wholesalers. As the area has a lot of vegetables originating from outside, the quality and supply of the aforementioned items impact the businesses extraordinarily and the channel through which they come in is the wholesalers. Along these lines, for both item developments into and inside the district, the wholesaler is in control. Lamentably, because of the little preparation volume, focused on beneficiaries are unable to even captivate with the wholesalers, not to mention have any impact on them.

Inter-Firm Relationships

The vegetable worth chain is strongly created chain fabricated for velocity of conveyance. Thusly collaborations and coordinated efforts exist between merchant assemblies particularly to get the item into the shoppers' submit as short a period as would be prudent. Locale wholesalers stay in contact with different markets and their retailers to rapidly arrange costs and terms of exchange. The quality of between firms relationships might be seen in the thought of requisition based wholesalers who claim the item don't yet offer it for the ranchers' benefit for a requisition. All agreement are verbal and dependent upon shared trust. As the business is spread out through the year crosswise over distinctive vegetables, the business sector performing artists for the most part deal with a stable business relationship for long haul gainfulness.

The Market Channel Analysis:

The vegetable worth chain is astrongly created chain fabricated for velocity of conveyance. All things considered In the vicinity of 15% of the vegetables that are processed provincially are devoured by individuals going to the nearby bazaars arranged near ranches in the towns. As the neighborhood arotdars additionally retail 70% of their exchanged volume straightforwardly to buyers, the rest 30% delivers as promised nearby vegetable retailers. The utilization example uncovers that the normal day by day utilization structure is molded by the generally accessible vegetables. Once in a while vegetables from far off towns achieve these businesses. The local level customers purchase the vegetables for utilization from the provincial bazaars that are bigger and are more differentiated regarding accessibility of things than nearby bazaars. Their utilization arrangement shows a broader reach of vegetables because of a mixture of sources from inside the district incorporating the ones that hail from different regions. Consistent with the study, 78% of the vegetables transformed in the project ranges are expended at this territorial level. The closure customers purchase just about every last bit of it from vegetable retailers arranged in territorial level markets like Reazuddin Bazaar, Bahaddarhat Bazaar and so forth in Chittagong metropolitan territory. The explanation for this vast divide is the populace thickness of the metropolitan territory and the vicinity of numerous restaurants of distinctive sizes. The external area level accepts the rest 7% of vegetables prepared in the project zones.

Medicinal Plants: Market Channel Analysis

Although there is no formal market of medicinal plant, The medicine companies and herbal companies directly collect through few numbers of forias. The end market of medicinal plants is essentially segregated into two levels: a) regional and b) national. The extracts from the medicinal plants travel through the value chain to reach the herbal medicines producers which in turn reaches the consumers throughout the country. The household usage of extracts from medicinal plants compared to consumption as herbal medicine, it is considered to be negligible and not accounted for in this consumption calculation. Moreover, as per market study, 95% of the extracts of medicinal plants that are consumed as herbal medicines are imported from India, Pakistan and China. Among the total produced extracts of medicinal plants from the program areas in Chittagong, Rangamati and a small part of Cox's Bazaar, nearly 30% goes to local herbal medicine producers at the regional level and 18% goes to the national level herbal medicine producers. The national level consumers acquire their products from national level herbal medicine producers, which represent nearly 53% of the total products extracted from medicinal plants cultivated in these program areas.

Market opportunities of Vegetable and Medicinal Plants

The market opportunity for vegetables and medicinal plants is well drafted by the soil nature. The soil in this region is highly fertile and favorable for vegetables and medicinal plant production. Assessing the capacity, it is seen that at least 75% of beneficiaries have cultivable land and cultivable land is also available for leasing which directs towards a potential expansion of the production to meet the yet unmet demand.

Traders are well-connected with regional and even national markets. So, with increased supply of vegetables, the opportunity for vegetable traders will increase. The inclusion of women in the vegetables value chains can potentially increase the productivity per household and at the same time can generate income through economic activities.

8.6 Assessment of the regulatory environment and support services

The study area of Chittagong Southeast Zone-1 is comprised of three protected areas (PA): Dudpukuria-Dhopachari Wildlife Sanctuary (D-D WS), Chunati Wildlife Sanctuary and Kaptai National Park. The forests are tropical evergreen or semi-evergreen. In the protected areas, the array of infrastructure facilities should be widened more. Roads and other physical communications are very poor in some parts of the study area. This situation leads to higher overheads across the value chain of vegetables and medicinal plants. A significant are of the hill-tracts is yet to get electricity connections.

Government bodies like Upazila Agriculture offices in the study areas exhibit a vibrant interest in expansion of the production of vegetables; however, they do not have any urgent mandate on the production of medicinal plants at this moment. On the other hand Bangladesh Agricultural Research Institute (BARI) has been promoting a wide variety of profitable hybrid species, improved culture techniques and appropriate post-harvest practices for the production of vegetables and medicinal plants. Relevant training programs and agricultural extension initiatives are limited in the project areas.

Several NGOs, banks and financial institutions are operating in and adjoining areas of D-D WS, Chunati WS and Kaptai NP. Major NGOs in the locality are Grameen Bank, IDF, BRAC, SHED, ASA, CARITAS, Green Hill, UNDP,etc. Besides, Bangladesh Krishi Bank and BRDB's Rural Livelihood Project (Palli Jibikayan Prokalpa) also operate in these project areas. The major activities of the NGOs are concentrated on health, education and alternate income generation. Most of them have credit programs exclusively for the women. Bangladesh Krishi Bank and Palli Jibikayan Prokalpa of BRDB and several NGOs provide microcredit services to the local people.

Forest Department is the key regulatory body in the protect ted areas and has the overall responsibility for management, conservation and development of the PAs through planting, harvesting, patrolling and guarding the forest resources. Forest officials mentioned about the challenges they confront, such as illegal felling, forest land encroachment, forest fire, livestock grazing, etc. Although some of the beneficiaries engage themselves in cultivation of vegetables and medicinal plants, their involvement around the protected areas should be co-managed effectively. An institutional change is also necessary within the Forest Department, from administrative roles to those of facilitators, given the more public oriented approaches taken in the past and present like social forestry and co-management initiatives.

Determined by remote settlement and solid tourism exercises, Chittagong has improved great supporting markets. The system of budgetary foundations, Government Branches and Data administration suppliers are available and animated in a large portion of the locales. The test is gaining entrance to these on-screen characters by the focused on beneficiaries. Since they are normally arranged in extremely remote areas and the extent of their business exercises are quite little, these supporting markets are frequently uninterested to captivate with them or even ignorant of them. Given beneath are just a portion of the supporting markets which exist and could profit our beneficiaries if better linkage is built.

Public Services: Sub-Assistant Agricultural Officer (SAAO) or Block Supervisors (BS) are available when farmers visit them for advice on diseases, etc. But due to remote location they cannot provide flawless service for mass farmers.

Information Services: In the study region, very few of the respondents were found having any formal training on advance cultivation or balanced use of fertilization. These trainings are mostly provided by input companies or by NGOs providing loan. Some of the big regional NGO and projects working for the information flaw of agro products

Financial Services: No particular loan facilities are available for vegetable farmers. They either have to take loan from paikers or depend on the loan from micro credit provider NGOs.

8.7 Poor/Resource-dependent People, Youth and Gender Analysis

Poor communities are directly benefited by the cultivating vegetables. Homestead production results in increased self-consumption and fulfilling the nutritional needsof the households. Vegetable production also requires minimal investment and less irrigation in comparison to other common crops like paddy, potato, etc.

Women in the project sites were found to be closely involved in the different stages of cultivation of vegetables and medicinal plants. They are more comfortable in vegetable gardening or cultivation of medicinal plants than in conventional farming of cereal crops.

In the project areas, most people are young. More than 70% of beneficiaries are aged from 20 to 40 years old. Young producers tend to engage in vegetable and medicinal plant cultivation as profits are considerably higher than those obtained from cultivation of traditional, cereal crops. So, involvement of youth in the value chain is decidedly prospective.

8.8 SWOT Analysis

Table 16: SWOT for Vegetables

Strengths	**Opportunities**
▪ Agro inputs like fertilizers, pesticides, seeds are available. ▪ A competitive market for agro input is present, which secures a competitive price for inputs. ▪ Hybrid seeds are available in the market. ▪ Established value chain with active market actors ▪ Suitable topology for vegetables and medicinal plants cultivation ▪ The soil is fertile and suitable for vegetables cultivation. A strong base for cultivation of vegetables like papaya, brinjal, cauliflower, cabbage, gourd, long bean, chili, red spinach is present.	▪ Supply gaps in the local markets for vegetables indicates at least 20% higher production will be consumed without making a negative impact on price ▪ Supply of produces from medicinal plants (barks, fruits, leaves etc.) can be increased by 50% without making a negative impact on the market price. ▪ Current traditional base for vegetable cultivation in the areas will play as a platform to improve productivity and efficiency. ▪ Labor market has the technical competence of various steps of cultivation
Weaknesses	**Threats**
▪ Current productivity is low due to traditional approaches of vegetable cultivation ▪ Scarcity of the lands to be leased for agricultural cultivation ▪ Insufficient access to finance ▪ Lack of training and information dissemination ▪ Traditional approach towards vegetable cultivation ▪ Too many middlemen in the value chain making it elongated ▪ Access to market is low in terms of physical communication and transportation.	▪ Vegetables coming from the Northwest Bengal (from districts like Bogra, Dinajpur, Rangpur, Pabna, Rajshahi) produced by commercial producers dominate the local market with lower price and better quality ▪ Farmers are not aware of highly productive ways of cultivation due to over dependence on natural fertility ▪ Lack of processors for produces (barks, fruits, leaves etc.) from medicinal plants ▪ The zone is prone to natural disasters like flood, cyclone and hurricanes

8.9 Constraints Analysis

Table 17: Constraints Analysis for Vegetables and Medicinal Plants

Value Chain Functions	Constraints
Input Supply	▪ Lack of information on appropriate inputs (seed, fertilizer, agro-chemicals etc.) and their modern usage ▪ Poor supply of hybrid varieties in distant rural areas ▪ Unavailability of adequate agro-machineries ▪ Inadequate promotion of improved varieties and cultivation method
Production	▪ Lack of knowledge on judicial usage of inputs and profitable farming techniques ▪ Lack of training facilities on appropriate culture methods ▪ Poor management in disease and pest control ▪ Insufficient yield of vegetables due to lack of improved culture method ▪ Insignificant access to market in terms of physical communication and transportation ▪ Inadequate production of medicinal plants resulting in more than 90% import of the herbal or medicinal plants from abroad
Trading	▪ Higher overheads due to exploitative nature of traders and intermediaries over the producers ▪ Lack of proper carrying and transport practices ▪ Traditional approach in processing or packaging, which results in higher wastage and quality-loss of the produces
Consumption	▪ Higher price of produces due to inefficient VC functions ▪ Lack of freshness or desired quality at customer end (esp. in urban area and distant districts) due to lack of proper storage, processing and transport facilities

8.10 Recommendations

Addressing the constraints observed in different functional stages of the value chain, a set of intervention plans is tabulated below along with their potential outcome and impacts. Prospective partners in implementing the interventions as well as some potential support service providers are also suggested in the table.

Table 18: Recommendations for Input (Vegetables and Medicinal Plants)

Constraints	Interventions	Output	Outcome	Impact
▪ **Lack of information on appropriate inputs (seed, fertilizer, agro-chemicals etc.) and their modern usage** ▪ **Poor supply of hybrid varieties in distant rural areas** ▪ **Unavailability of adequate agro-machineries** ▪ **Inadequate promotion of improved varieties and cultivation method**	▪ Capacity development program on better farming technology, right use of fertilizer and agro-chemicals for input retailers (seed, fertilizer, pesticides etc.) ▪ Training of Trainers (ToT) for local sales and marketing personnel of the Input companies (seed, pesticides, vitamins, agro-chemicals, fertilizers, agro-machineries etc.) ▪ Training on improved variety, plantation and management for nursery owners (seedlings, saplings) of vegetables and medicinal plants ▪ Developing institutional linkage between commercial Vegetables and medicinal plant nurseries and Bangladesh Agricultural Research Institute (BARI) and other horticulture research bodies.	▪ Input sellers disseminate the knowledge on better farming technology, right use of fertilizer and agro-chemicals to the producers as embedded service to address farmers' lack of awareness of highly productive ways of cultivation ▪ Local/regional sales and marketing personnel of the input companies ensure adequate supply of improved varieties and necessary inputs as well as provide appropriate knowledge on better culture techniques to the producers ▪ Input companies initiate promotional activities to make improved culture systems of vegetables and medicinal plants more familiar to rural producers ▪ BARI and other potential agro-research entities provide necessary knowledge and technical supports for training programs and knowledge dissemination	▪ Producers get improved knowledge on appropriate inputs and their right usage ▪ Input companies, nurseries and the input retailers develop a better and healthy business linkage with the producers ▪ Vegetable farmers and medicinal plant producers adopt improved cultivation methods and better practices ▪ Improved varieties, convenient machineries and tools, innovative culture methods and solutions for production of vegetables and medicinal plants get familiar and popular across the value chain	▪ Better knowledge of producers on improved variety, appropriate farming and management ▪ Improved productivity or yield ▪ Better quality of Vegetables and Medicinal plants and higher farm-gate price ▪ Increased profitability
Leverage Point / Potential Partners: Seed companies; Fertilizer companies; Agro-chemical companies and Commercial nurseries **Support Service Providers:** Bangladesh Agricultural Research Institute (BARI); Hortex Foundation; DAE Office				

Table 19: Recommendations for Production (Vegetables and Medicinal Plants)

Constraints	Interventions	Output	Outcome	Impact
▪ **Lack of knowledge on judicial usage of inputs and profitable farming techniques** ▪ **Lack of training facilities on appropriate culture methods** ▪ **Poor management in disease and pest control** ▪ **Insufficient yield of vegetables due to lack of improved culture method** ▪ **Insignificant access to market in terms of physical communication and transportation** ▪ **Inadequate production of medicinal plants resulting in more than 90% import of the herbal or medicinal plants from abroad**	▪ Training for Vegetables and medicinal plant producers on better farming technology, right use of fertilizer and agro-chemicals, selection of improved variety, plantation and water management ▪ Arranging Demonstration plot (through nurseries and large producers), field days and exposure visits for the target producers ▪ Developing promotional materials (poster, calendar, documentary film, leaflet, booklet etc.) for producers on improved varieties, profitable farming, eco-friendly practices in vegetables and medicinal plants cultivation etc. ▪ Creating producers' group within the VCFs to get further reach to forward market (i.e wholesale market), to reduce transport cost, to minimize wastage/ quality loss and to strengthen producers' bargain capacity over the local farias (intermediary) ▪ Collaboration with SRDI to scale up their existing fertilizer recommendation guide to incorporate in the target area and to promote it through CMC, local NGOs and community information service providers	▪ Producers get training on better farming technology, right use of fertilizer and agro-chemicals, selection of improved variety, plantation and water management ▪ Beneficiaries as well as non-beneficiary producers learn about the better culture practices in vegetables and medicinal plants production ▪ Partners facilitating the intervention get better promotional coverage of their products or services ▪ Producers' groups add efficiency in the value chain performance through their collective efforts ▪ SRDI facilitate in development of a fertilizer recommendation guide and provide other assistance to establish the best practices on balanced fertilization in the target area	▪ Vegetable farmers and medicinal plant producers adopt improved cultivation methods and better practices ▪ Awareness on better culture practices get increased at both beneficiary and non-beneficiary level ▪ Producers gain stronger market access and bargain power through collective approach in trading ▪ Producers become aware of judicial use of fertilizers and the importance of balanced fertilization in restoring soil fertility	▪ Enhanced awareness and better knowledge on fertilizer usage, appropriate farming and management ▪ Improved productivity or yield ▪ Reduced wastage ▪ Better quality of vegetables and medicinal plants leading to higher farm-gate price ▪ Increased profitability ▪ Increased fertility of soil

Leverage Point/Potential Partners: Seed companies; Fertilizer companies; Agro-chemical companies; Herbal medicine companies and Commercial nurseries
Support Service Providers: Bangladesh Agricultural Research Institute (BARI); Bangladesh Forestry Research Institute (BFRI); Soil Resource Development Institute (SRDI); Horticulture expert/ institution; DAE Office and Micro-finance institutions

Table 20: Recommendations for Trading and Consumption (Vegetables and Medicinal Plants)

Constraints	Interventions	Output	Outcome	Impact
▪ **Higher overheads due to exploitative nature of traders and intermediaries over the producers** ▪ **Lack of proper carrying and transport practices** ▪ **Traditional approach in processing or packaging, which results in higher wastage and quality-loss of the produces** ▪ **Higher price of produces due to inefficient VC functions** ▪ **Lack of freshness or desired quality at customer end (esp. in urban area and distant districts) due to lack of proper storage, processing or transport facilities**	▪ Training for Vegetable producers on appropriate harvest and post-harvest technologies, packaging, processing and effective transport techniques ▪ Initiating contract farming through collaboration among the producers' groups and the national or regional agro-processing companies to produce processed vegetable products ▪ Arranging exposure visit for enthusiastic producers or lead farmers in other Asian countries where there are improved processing practices and technologies for vegetables. ▪ Building linkage among the Vegetable producers' groups/ traders with urban super shops, restaurants, hotels, Medicine companies etc.	▪ Horticulture expert or institution provides training to the producers on appropriate harvest and post-harvest technologies, packaging, processing and effective transport techniques to reduce wastage or quality-loss of the produces ▪ National or regional agro-processing companies and exporters engage the target beneficiaries through contract farming under suitable monitoring ▪ National and international institutes become partner in knowledge transfer programs on improved processing practices and technologies for vegetables. Program participants (e.g. lead farmer) ultimately disseminate the knowledge to small producers	▪ Producers adopt cost-effective and appropriate harvest and post-harvest technologies, packaging, processing of vegetables as well as medicinal plants ▪ Producers gain stronger market access and bargain power through collective approach in trading ▪ Small producers become responsive in taking up improved processing practices and technologies for vegetables and medicinal plants ▪ Customers get quality produces intact with desired freshness and food value	▪ Enhanced understanding on post-harvest technologies, packaging, processing and effective transport techniques ▪ Better access to market ▪ Stronger bargain capacity of producers ▪ Reduced wastage ▪ Better quality of produces and higher farm-gate price ▪ Increased profitability across the value chain
Leverage Point/Potential Partners: Vegetable processing companies; Urban super shops, restaurants, hotels etc; Herbal medicine companies **Support Service Providers:** Bangladesh Agricultural Research Institute (BARI); Horticulture expert/ institution; DAE Office; Foreign institutions				

Chapter 9: Value Chain Analysis for Fruits

9.1 Brief Overview

Seasonal fruits are still a coveted feature in Bangladeshi culture, with much celebration surrounding the different times of the year being favorable for different fruits.

Fruits are a huge market in Chittagong, with a large amount of trade ongoing within the greater Chittagong region. Fruits grown in Chittagong areas include products like papaya, banana, amropali mango, watermelon, pineapple, strawberry, guava, etc. Most of the produce is usually traded into the regional markets, and some even are exported to other districts like Dhaka.

Rationale for choosing Fruits as a Value Chain:

- It includes short-term fruits such as amropali, banana, pineapple, papaya, strawberry, watermelon
- It has no direct impact on Climate, but can positively reduce pressure on forest by engaging the extractors in cultivation
- Cultivation can improve nutrition intake of women; furthermore can be produced in the homestead which would increase potential for inclusion of women beneficiaries under CREL
- Increase in production will create additional jobs for youth across the value chain
- Favorable growth trend; increasing number of farmers getting engaged
- Favorable geo-climatic condition resulting in better produces and better price
- Government is promoting cultivation of different kinds of suitable fruits as saline tolerant crops especially in the coastal regions
- High market demand and stable market price

Table 21: Site Specific Cost Benefit Analysis for Fruits[14]

Sl.	Crop/Species	Lease Cost / Decimal	Field Preparation Cost/ Decimal	Seed Cost/ Decimal	Fertilizer Cost/ Decimal	Pesticide cost/ Decimal	Labor cost / Decimal	Transport and other costs / Decimal	Average Total Cost / Decimal	Average Yield (kg)/ Decimal	Average Revenue/ Decimal	Average Profit/ Decimal
	South East Region 1 (Chittagong) – Site: Chunati											
1	Papaya	272	231	1,038	933	176	1,257	1,426	5,332	1,412	28,240	22,908
2	Amropali	-	100	420	220	136	352	248	1,476	35	1,960	484
3	Guava	-	70	51	34	7	5	23	190	64	71	(119)
	South East Region 1 (Chittagong) – Site: Jaldi											
1	Papaya	44	55	162	308	88	120	24	800	56	1,688	888
2	Banana	93	40	27	40	13	53	13	280	75	2,250	1,970
3	Amropali	97	87	467	117	48	289	35	1,140	155	10,850	9,710
4	Guava	35	90	90	53	62	182	68	580	123	7,350	6,770
5	Black berry	15	44	52	30	7	44	7	200	60	2,400	2,200
	South East Region 1 (Chittagong) – Site: Dhopachhori											
1	Papaya	102.62	90.24	193.10	403.21	108.95	205.52	19.23	1,122.87	173.86	4,471.43	3,348.56
2	Banana	63.33	70.00	86.67	54.17	8.42	87.50	18.33	388.42	4.79	1,666.67	1,278.25
3	Amropali	34.50	46.00	153.60	40.93	15.50	95.00	14.50	400.03	12.80	486.25	86.23
4	Guava	10.42	45.83	36.67	15.00	23.75	72.92	32.08	236.67	343.33	350.00	113.33
	South East Region 1 (Chittagong) – Site: Dudhpukuriya											
1	Papaya	129	86	200	255	100	255	34	1,059	258	6,668	5,608
2	Amropali	135	43	142	41	29	66	14	470	29	1,240	1,782
3	Guava	185	48	87	40	23	136	12	529	81	2,740	3,044
	South East Region 1 (Chittagong) – Site: Kaptai & Karnafuli											
1	Papaya	-	110.00	41.55	98.50	29.00	86.00	94.00	459.05	241.50	1,765.00	1,305.95
2	Banana	-	172.67	45.70	4.50	-	160.00	56.73	439.60	2.63	790.00	350.40
3	Amropali	-	122.50	58.50	53.75	29.25	147.50	82.50	494.00	55.75	2,030.00	1,536.00
4	Guava	-	68.83	12.45	36.50	19.35	46.75	41.90	225.78	21.75	435.00	209.22

[14] *Primary data: cost benefit analysis*

9.2 End Market Analysis

9.2.1 Main Market, Buyers &Competition

The end market for fruits collected from the program areas in Chittagong, Rangamati and part of Cox's Bazaar district are mainly located in three levels: a) local consumers, b) regional consumers, and c) consumers in other districts. Both the regional and local markets in the study area are largely dominated by imported fruits sourced from other regions of Bangladesh and abroad.

The local consumers buy the fruits from the local bazaars situated not far from the farming locations. These bazaars sell almost 13% of fruits produced locally which is consumed by the people living locally. Here the consumption composition (items eaten) is largely controlled by the availability of seasonal fruits that are produced locally.

The regional consumers buy the fruits from small, medium and big fruit vendors from the regional level which is Chittagong city and around. The big bazaars like Reazuddin Bazaar, Falmandi, Bahaddarhat Bazaar etc. serve as the major locations for the consumers who buy from the big and medium vendors. About 73% of the fruits produced in the program areas are consumed here. This high percentage of consumption of local food is mainly due to the population density and the presence of high to medium income groups in the metropolitan area.

Another 14% of the fruits produced in the program areas go out of the district and are consumed by consumers located in adjacent districts like Bandarban, and Cox's Bazaar; and also further away districts like Dhaka.

From the in-depth interviews, the market size of the regional level of fruit trading can be estimated to be Mango: BDT 1,000 crore, Litchi: BDT 40 crore, Pineapple: BDT 100 crore, Jackfruit: BDT 30 crore, Plum: BDT 10-12 crore.

9.2.2 Demand-Supply Situation

It was seen in the market that a large portion of the fruits are sourced from outside the district. Almost 60% of the fruits available in the local market are sourced from across the country. Popular fruits like mango, litchi, banana, jackfruits, berry, etc. are sourced mostly from north western part of the country, from districts like Rajshahi (mango), Dinajpur (pineapple, late variety litchi), Rangpur (banana), Natore (hybrid watermelon), Comilla (plum) and Meherpur & Chuadanga (early variety litchi). Moreover, there are various fruits that are imported from other countries. For example malta comes from South Africa, which is seeing a declining trend due to increased demand for it in the European market in recent years. On the other hand, though there is some production of strawberry in the region, the demand is low in the region and most of the strawberries produced locally are sent to the capital to cater to the national level.

The demand for seasonal fruits is steep. However, in the peak season when the demand is high and price hits the highest point the farmers exhibit the tendency to collect the fruits in a hurry to gain from the infatuated rates. This results in overflow of supply in the market, leading to a sharp decline in price and wastage of fruits due to limitation of capacity of proper storage and transportation. This also results in wastage of 1-2 tons of fruits which are usually dumped in the garbage.

9.2.3 Market Opportunities

The regional fruits market holds great potential for substituting the imported fruits and fruits sourced from locations outside the region. The mangoes from Rahshahi, Chapa Nawabganj, Dinajpur, and Bogra can be replaced with extensive cultivation of *Amropali* and *Ranguain* – two local high yielding varieties of mangoes – in the program areas. Litchi and banana can be grown in the fallow strips of lands in the hilly areas where cereal crops and vegetables cannot be cultivated.

Studying the supply demand dynamics of the regional market, which represents 73% of consumption of fruits produced in program areas, it is evident that the inflow of fruits to the arots can be controlled by proper dissemination of capacity information. For example: farming zones can segregate the collection and transportation time to get rid of the overflow mentioned in the previous points.

Moreover, expansion of capacity in terms of storage and transportation can greatly enhance the handling quality of fruits.

9.3 Value chain map and analysis of value creation activities

The value chain of the fruit market in Chittagong has been designed based on the information collected from the different market actors – producers, input suppliers, traders, government officials, etc – in the project regions.

9.3.1 Value Chain – Fruits Sector Overview

The value chain of the fruit market in Chittagong has been designed based on the information collected from the different market actors – producers, input suppliers, traders, government officials, etc – in the project regions.

Business Environment – Underlying Factors

The performance of this value chain depends on two major underlying factors that shape the way it performs. These two are:

Availability of quality input

The availability of various quality inputs is good in the region. Both the open and packed seeds are available. Farmers can choose from a wide variety of fruits to cultivate. Fertilizers, pesticides and micronutrients are also available. Due to the fertile nature of soil in the area the land input plays a vital role in producing quality product. On the other hand farmers tend to depend more on natural strengths, e.g. soil, than modern scientific farming. As a result the full potential is yet to be tapped. Besides, due to having expected results from the fertile soil itself farmers tend to rely on traditional approach towards farming which is not sustainable.

Proper access to market

The proper access to market is essential because 1) fruits are highly perishable, 2) demand has to be properly forecasted to optimize return. The vegetable farmers in the remote areas in this region suffer from bad communication through roads and rivers. This often pushes them to sell the produce to a lower price to the farias and collectors. The freshness of the fruits also deteriorates rapidly once these are plucked from the fields. Hence, absence of a proper forecasting due to lack of market information results in loss of revenue.

9.3.2 Description of Value Chain Actors, Functions and Map

Input Supply

The input supply of fruits value chain in the region comprises of seed sellers, nurseries, fertilizer sellers, medicine sellers and pesticide sellers. The input supply is more or less available for a variety of fruits including the mandate fruits like – amropali, papaya, banana and guava. National level seed companies are present and both the open and packed seeds are available.

The nursery owners in the region sell seedlings of local variety of fruits as well as high yielding ones. The fertilizer, medicine and pesticide sellers sell inputs of many local and imported items. The input sellers generally take training from the input companies and provide that information to farmers regarding amount and timing seeds, fertilizers, pesticides, medicines and other agro input.

Production

The producers are mainly of two categories 1) household and 2) commercial. The presence of household fruit farmers is predominant in the region. They basically grow fruits in the back yard of their residential real astate.

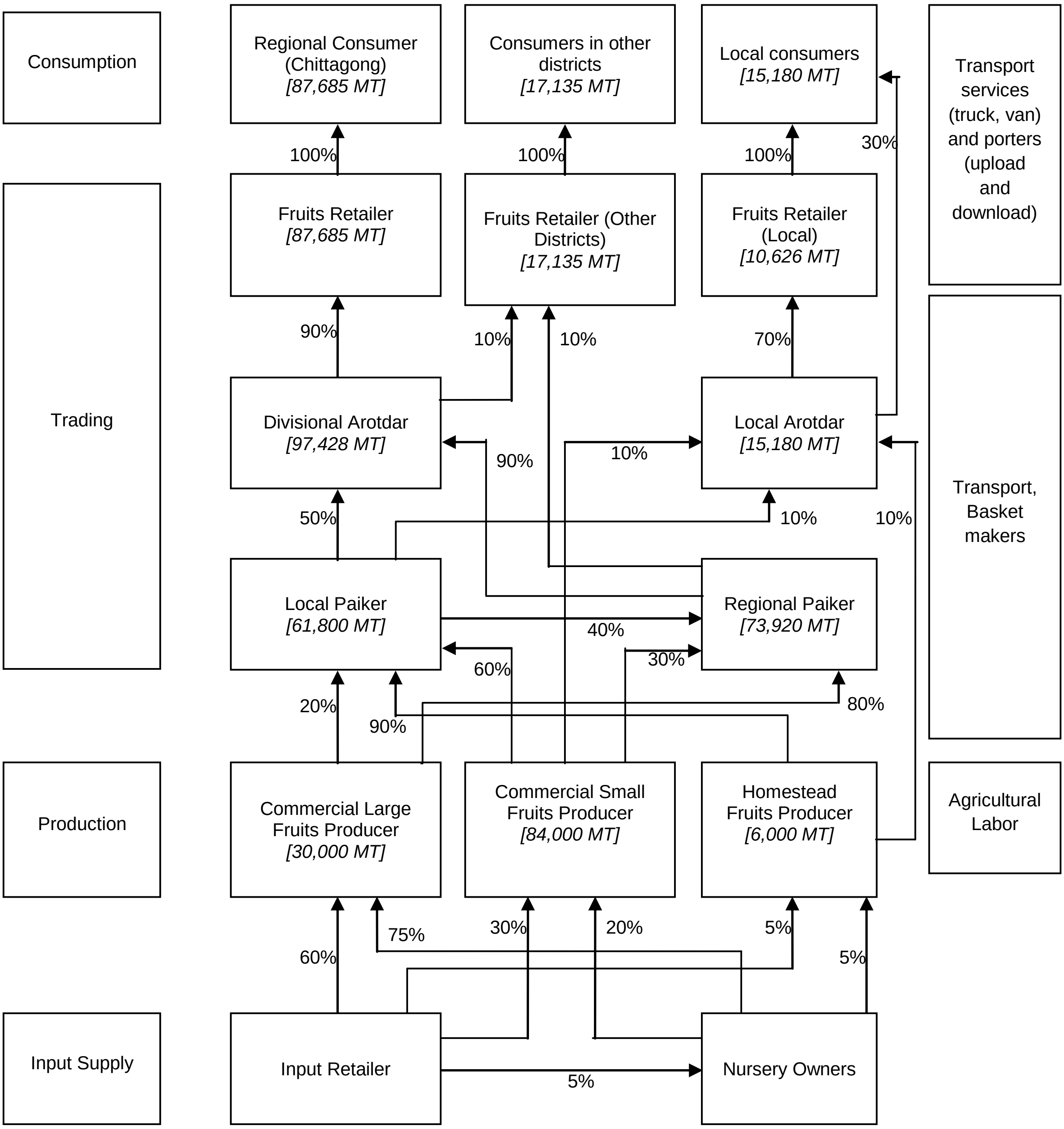
The traditional techniques of fruit cultivation are practiced with low quality input and low maintenance. The fertile nature of the soil helps the quality of fruits. However, introduction of modern farming techniques can largely change the scenario to tap the full potential. The tendancy to upscale the production from homestead to a commercial level is yet to be observed.

Trading

Traders play a vital role in the whole value chain. Due to the remoteness of many areas covered under the study, the beneficiaries depend on the traders (farias, collectors, paikers, arotdars etc.) for market information and demand forecast. Traders also enjoy an upperhand in bargaining while collecting or buying the fruits from the beneficiaries.

A lack of horizontal association is observed as the paikers and farias do not share the cost of transport to take the products from the filed to the aarots. Additionally, they lack the knowledge of properly handling the fresh fruits which results in uncontrolled wastage.

Figure 13: Value Chain Map (Fruits)[15]



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15 *Primary data: in-depth interviews, questionnaire survey*

9.4 Value Chain Performence

9.4.1 Performance of the Value Chains

Table 22: Fruits Value Chain Actors and Performances

	Input Supply	Production	Trading	Support services
Actors	Input Sellers, Nursery Owners	Commercial Large Producers, Commercial Small Producers, Homestead Fruits Producers	Local Paiker, Regional Paiker, Local Arotdar, Divisional Arotdar, Fruits Retailer (Local), Fruits Retailer (Regional), Fruits Retailer (other districts),	Transportation, Agricultural Labor
Functions	▪ Selling seeds of various fruits ▪ Selling seedlings of various fruits ▪ Selling fertilizers, vitamins, pesticides ▪ Providing information about proper amount and timing seeds, fertilizers, pesticides, medicines and other agro input	▪ Cultivating fruits at homestead level and at small and large commercial levels ▪ Selling fruits to various actors in 'trading' roles in the local and regional bazaars.	▪ (Local and Regional Paikers) Collecting products from commercial fruit farmers and from remote areas ▪ Takes the products to Local and Divisional arotdars and sells through their physical shops in exchange of sales commission ▪ Bears the transport cost ▪ Undertakes the risk of products to remain unsold or to be sold at a lower price ▪ (Local and Divisional Arotdars) Collects and exhibits products both from paikers and farmers ▪ Sells products to retailers and consumers. ▪ Takes sales commission	▪ Providing carrying and transport facilities to the traders and farmers ▪ Providing physical labor as helping hands to the farmers
Performance (-)	▪ Demand for packet seed is higher than open seed because of high yield ▪ Knowledge about the proper usage of agro inputs acquired from agro input companies does not suffice in most cases	▪ For homestead and small commercial farmers the cultivation technique is traditional and the yield is low from standard ▪ Proper usage of modern scientific technology is lacking ▪ Lower production defies the economies of scale ▪ Because of the naturally fertile soil the farmers put minimum effort which to maximize yield	▪ Paikers and Farias do not share cost of transport due to competitiveness ▪ Lack of proper handling leads to wastage of a small portion (2-4%) of products	▪ Poor quality of roads increase the risk of wastage of carried products as it takes longer than should ▪ High cost of transport adds to the value of the vegetable s
Performance	▪ Availability all	▪ Peak season	▪ Transport time wastage	▪ Availability

(+)	kinds of seeds and other agro inputs ensures variety of vegetables to be cultivated ▪ The mobile seed sellers reach the remote areas to distribute seeds	production is high ▪ Better quality (healthy and tasty) vegetables engross higher demand in the regional markets	rate is low ▪ Access to information is moderate in terms of price and availability	of the transport and porters help reduce the effort of the paikers

9.4.2 Business Enabling Environment

In general, the business enabling environment for fruits value chain encourages the sector to grow in the region. There is good availability of both input suppliers and market actors. The challenge remains within the production tier as many producers and especially the targeted beneficiaries are satisfied with their subsistence farming technique, unwilling to risk the investment behind commercial upscaling. Most of the fruits are produced in backyards of household assets. Proper commercialization has not been introduced yet.

Gender and cultural norms: The culture in the region encourages women to participate in yard farming and men to be out in the farmlands. Women participate in major farming decisions when it comes to the yard gardening. However, the labours hired to do menial works mostly comprise of men. The maintenance of the fields and fruit plants is mostly done by the owners, the member of the household, males and females alike.

9.4.3 Vertical Linkages

Vertical linkages in the fruits producing beneficiaries are moderate. The availability of input supply is good. The availability of traders is inadequate which leads the beneficiaries to suffer with a lower bargaining capacity than the traders. The field level price is mostly controlled by the farias ans paiker who take the products from the field to regional level markets.

Access to market

The beneficiaries lack a proper access to market due to the remoteness of the locations of the farm fields. The only available markets for the beneficiaries are the local bazaars where the locals buy the fruits for consumptions and the farias and paikers who take the rest to regional level market.

Input Access and Quality

The availabity and quality of input is satisfactory. The variety of seeds and seedling enables farmers to choose from a wide range of options. The beneficiaries are observed to lack knowledge about proper usage of some inputs which leads to inappropriate usage of the same resulting in lower production.

Access to Market Information

The beneficiaries mostly depend on the farias and collectors regarding market information. Being a rapidly perishable item fruits are required to be sold within a short period of time, usually a day or two.

The freshness of the fruits deteriorates rapidly once plucked from the plants, which in turn results in diminishing monetary value. The beneficiaries' lack of demand forecasting lowers their revenue.

9.4.4 Horizontal Linkages

Horizontal linkages are present in the beneficiaries in a very weak to non-existent format. There are very few cases where the beneficiaries formed groups to cultivate on a collective manner. Moreover, the collaborative approach is also non-existent in the trading level.

Types & forms of collaboration & competition

In very few cases the farmers share the lands to form a larger piece of land to be more efficient in cultivating. In most of the cases, the beneficiaries avoid any kind of collaboration and grow and sell their own produce. The lack of collaboration is also seen in the trading tier, where the competition is very high.

9.4.5 Scopes for Upgrading

Input Supply

Fruit producers usually keep good relations with the input retailers in their locality and distant markets. They also depend on the input retailers' guidelines in using the inputs for cultivation. This relation can be reinforced through developing the knowledge of the input sellers. The project can collaborate with existing and potential input companies (seed, saplings, sucker, agro-chemicals, fertilizers etc.) and work for the capacity development of the local input suppliers on appropriate techniques and better practices in fruit cultivation. Input sellers ultimately would disseminate the knowledge on better farming technology, right use of fertilizer and agro-chemicals to the producers as embedded service.

Plant nurseries and several input companies are already functional in the project areas. Interventions partnered with these input entitiesmay fortify the overall efficiency in backward linkage of the value chain. Bangladesh Agricultural Research Institute (BARI), horticulture expert/ institution and other potential agro-research entities can be collaborated with to provide necessary knowledge and technical know-how on selection of appropriate inputs and judicial usage of those for higher yield and profitability.

Production

In fruit cultivation, most farmers still apply traditional approaches and techniques due to inadequate knowledge about modern cultivation techniques. However, commercial producers are now eager to explore scopes and opportunities for adopting new technologies and modern practices to increase their production of fruits.

Appropriate selection of high-yield varieties and mixed plant cultivation can ensure higher production, and thus higher profitability. Space management in tree plantation is another major issue for successful cultivation of fruits. BARI invented various fruit varieties that are suitable for profitable production in the study area – BARI Aam-3, BARI Aam-4 (hybrid), BARI Strawberry-1, BARI Peyara-2, BARI Malta-1, BARI Naspati-1, BARI Kul-2, Shahi Papaya, etc.

Proper plantation, balanced fertilization and water management may result in higher yield. In a performance evaluation of some hybrids, maximum number of fruits per plant and highest yield were found in Hy-036. Effect of different fertilizer doses on the yield and yield attributes revealed that application of 250 g N, 80 g P, 135 g K, and 50g S per plant would be optimum for enhancing the yield and quality of mango. In another experiment, it was revealed that Paclobutrazol at 4500 ppm combined with Langra gave the highest TSS. Highest scab disease reduction was observed in fruits treated with Rovral 50 WP.Efficacy of plant extracts were studied and found that fruits sprayed with tulsi reduced stem- end rot maximum.

Effect of herbicides and mulches showed that polythene covered mulch with pre-emergence herbicide application before 7 DAT with 2ml per liter water would be more effective to control weeds in strawberry cultivation. Another experiment of spacing and date of planting showed that early planting and wider spacing (50 x 50 cm) gave the best results. Straw mulch with 50 x 30 cm spacing gave the highest yield followed by black polythene with same spacing.

The shelf life of mango could be extended up to 5 days by hot water treatment when packed in corrugated fiber board carton, and hot water treatment was found to reduce disease incidence in zero energy cool chamber.

Trading

Formation of fruit producers' groups may potentially strengthen the bargaining capacity of the producers. Capacity development initiatives for the existing traders and better linkage with the producers will create a more structured channel of procurement and distribution that can cater to a niche market. Institutional linkages with different horticulture and Agro-research institutions would help the farmers have better awareness and up-to-date information on profitable fruit cultivation.

9.5 Value chain governance

Influence & control along the chain

The value chain is largely influenced by traders, especially the farias and paikers. As the region brings in a large amount of fruits from outside (from North and North-West regions of the country), the traders enjoy an upperhand in bargaining.

Power dynamics

The fruit aarots located in the Chittagong Metropolitan area works as the biggest power house in the value chain. This is because the massive demand for volume and supply of value generated in the metropolitan area are unmatched in the rest of the urban areas in the region. However, the aarots in other urban areas also play influential role to shape the dynamics of the value chain.

9.6 Assessment of the regulatory environment and support services

Infrastructure: Chittagong Southeast Zone-1 is comprised of three protected areas (PA): Dudpukuria-Dhopachari Wildlife Sanctuary, Chunati Wildlife Sanctuary and Kaptai National Park. The forests are tropical evergreen or semi-evergreen. In some distant parts of the study area, roads and other physical communications are very poor resulting higher overheads across the fruits value chain. A significant part of this tract is yet to get electricity connections.

Public Services: Upazila Agriculture offices in the project areas possess a prolific interest in the expansion of the production of fruits. Several demonstrations of mixed fruits tree plantations are visible in these areas. Bangladesh Agricultural Research Institute (BARI) has also been promoting a wide variety of profitable hybrid species of fruits like amropali, ranguai, malta, dragon fruit, etc. This research entity has specific mandates on improved culture techniques and appropriate post-harvest practices for the profitable production local fruits. However, adequate training programs or agricultural extension initiatives are very limited in the project areas.

Forest Department is a key regulatory body in theseprotected areas and has the overall responsibility for management, conservation and development of the PAs through planting, harvesting, patrolling and guarding the forest resources. Forest officials mentioned about the challenges they confront, such as illegal felling, forest land encroachment, forest fire, livestock grazing etc. Although some of the beneficiaries engage themselves in cultivation of fruits, their involvement around the protected areas should be co-managed effectively. An institutional change is also necessary within the Forest Department, from administrative roles to those of facilitators, given the more public oriented approaches taken in the past and present like social forestry and co-management initiatives.

Other Non-governmental Services: There are several NGOs,banks and financial institutions operating their activities in and adjoining areas of D-D WS, Chunati WS and Kaptai NP. Major NGOs that operate in the locality are Grameen Bank, IDF, BRAC, SHED, ASA, CARITAS, Green Hill, UNDP etc. Besides, Bangladesh Krishi Bank and BRDB’s Rural Livelihood Project (Palli Jibikayan Prokalpa) also operate in the study area. The major activities of the NGOs are concentrated on health, education and alternate income generation. Most of them have credit programs exclusively for the women. Bangladesh Krishi Bank and Palli Jibikayan Prokalpa of BRDB and several NGOs provide micro credit to the local people for improving the livelihood.

9.7 Poor/Resource-dependent People, Youth and Gender Analysis

Commercial fruits production in the project area is yet to expand advantageously. Poor communities are used to being involved in homestead fruit gardening, which ensures at least their self-consumption and indispensable nutrition.

Women in these project sites were commonly found to be engaged in sowing, post-harvest and packaging activities in fruits cultivation. They are more comfortable in homestead gardening than in conventional farming of cereal crops.

In the forest-blessed study area, most people are young. More than 70% of beneficiaries are aged from 20 to 40 years old. So, involvement of youth in the value chain is decidedly prospective.

9.8 SWOT Analysis

Table 23: SWOT Analysis for Fruits

Strengths	**Opportunities**
▪ Agro inputs like fertilizers, pesticides, seeds are available ▪ A competitive market for agro input is present, which secures a competitive price for inputs ▪ Hybrid seeds are available in the market ▪ Established value chain with active market actors is present ▪ The topology of the land is suitable for fruits cultivation ▪ The soil is fertile and suitable for cultivation of fruits like jackfruit, mango, banana, sweet papaya, dragon fruit, lichy, guava, plum, olive, pineapple, malta, orange, strawberry, watermelon, etc.	▪ Supply gap in the local markets for fruits indicate at least 50% higher production will be consumed without making a negative impact on price. ▪ Current traditional base for homestead fruit cultivation in the areas will play as a platform to improve productivity and profitability. ▪ Labor market has the technical competence of various steps of cultivation. ▪ With the increment of local production of fruits the role of the fresh fruits processors will be revived in the market.
Weaknesses	**Threats**
▪ The physical infrastructure of the transportation system is insufficient to handle large amounts of fresh fruits. The largest wholesale fruits center of the region "Falmandi" located at Chittagong town where there are not adequate transport trucks available when the market is flooded with freshly plucked fruits from the locality ▪ Insufficient handling of cargo leads to large wastage of fresh fruits ▪ Due to absence of dry fruits processors in the area the storage duration of fresh fruits is very limited ▪ The malpractice and misperception of relevant authorities regarding chemical preservatives used to elongate the storage duration impacts the confidence level in consumers ▪ The value addition pattern in the wholesale market does not match with the retail market; The retail market is often insensitive to positive changes in quantity available in the region	▪ The price fluctuation in the harvesting season impacts the fruits collection rapidly. As a result, the markets are flooded with plucked fruits on the following day of a high-price day. This leads to immediate fall of the market price. ▪ Fruits coming in from the Northwest Bengal (from districts like Natore, Comilla, Rajshahi, Dinajpur etc.) produced by commercial producers dominate the local market with lower price and better quality. ▪ Farmers are not aware of highly productive cultivation due to over dependence on the natural fertility of the region.

9.9 Constraints Analysis

Table 24: Constraints Analysis for Fruits

Value Chain Functions	Constraints
Input Supply	▪ Inadequate information and knowledge on appropriate inputs (seed, sapling, fertilizer, agro-chemicals etc.) and their modern usage ▪ Poor supply of hybrid varieties in distant rural areas ▪ Unavailability of adequate agro-machineries ▪ Poor promotion of improved varieties and cultivation method
Production	▪ Lack of knowledge on judicial usage of inputs and profitable farming techniques ▪ Lack of training facilities on appropriate culture methods ▪ Poor management in disease and pest control ▪ Insufficient yield of fruits due to lack of improved culture method

	▪ Insignificant access to market in terms of physical communication and transportation ▪ Inadequate production of fruits resulting in a higher rate of import from abroad
Trading	▪ Higher overheads due to exploitative nature of traders and intermediaries over the producers ▪ Lack of proper carrying and transport practices ▪ Traditional approach in processing or packaging, which results in higher wastage and quality-loss of the produces
Consumption	▪ Higher price of produces due to inefficient VC functions ▪ Lack of freshness or desired quality at customer end (esp. in urban area and distant districts) due to lack of proper storage, processing or transport facilities

9.10 Recommendations

Addressing the constraints observed in different functional stages of the value chain, a set of intervention plans is tabulated below along with their potential outcome and impacts. Prospective partners in implementing the interventions as well as some potential support service providers are also suggested in the table.

Table 25: Recommendations on Input Supply (Fruits)

Constraints	Interventions	Output	Outcome	Impact
• **Inadequate information and knowledge on appropriate inputs (seed, sapling, fertilizer, agro-chemicals etc.) and their modern usage** • **Poor supply of hybrid varieties in distant rural areas** • **Unavailability of adequate agro-machineries** • **Poor promotion of improved varieties and cultivation method**	– Training program on better farming technology, right use of fertilizer and agro-chemicals for input retailers (seed, fertilizer, pesticides etc.) – Training of Trainers (ToT) for local sales and marketing personnel of the Input companies (seed, pesticides, vitamins, agro-chemicals, fertilizers, agro-machineries etc.) – Capacity development of nursery owners (seedlings, saplings) on improved variety, plantation and management – Developing institutional linkage between commercial Fruits plant nurseries and Bangladesh Agricultural Research Institute (BARI) and other horticulture research bodies.	– Input sellers disseminate the knowledge on better farming technology, right use of fertilizer and agro-chemicals to the producers as embedded service – Local/regional sales and marketing personnel of the input companies ensure adequate supply of improved varieties and necessary inputs as well as provide appropriate knowledge on better culture techniques to the producers – Input companies initiate promotional activities to make improved culture systems of fruits more familiar to rural producers – BARI and other potential agro-research entities provide necessary knowledge and technical supports for training programs and knowledge dissemination	– Producers get improved knowledge on appropriate inputs and their right usage – Input companies, nurseries and the input retailers develop a better and healthy business linkage with the producers – Fruits farmers adopt improved cultivation methods and better practices – Improved varieties, convenient machineries and tools, innovative culture methods and solutions for production of fruits get familiar and popular across the value chain	- Better knowledge of producers on improved variety, appropriate farming and management - Improved productivity or yield - Better quality of fruits and higher farm-gate price - Increased profitability

Leverage Point / Potential Partners: Seed companies; Fertilizer companies; Agro-chemical companies and Commercial nurseries
Support Service Providers: Bangladesh Agricultural Research Institute (BARI); Bangladesh Forestry Research Institute (BFRI); Hortex Foundation; DAE Office

Table 26: Recommendations on Production (Fruits)

Constraints	Interventions	Output	Outcome	Impact
• **Lack of knowledge on judicial usage of inputs and profitable farming techniques** • **Lack of training facilities on appropriate culture methods** • **Poor management in disease and pest control** • **Insufficient yield of fruits due to lack of improved culture method** • **Insignificant access to market in terms of physical communication and transportation** • **Inadequate production of fruits resulting in a higherrate of import from abroad**	– Training for fruits producers on better farming technology, right use of fertilizer and agro-chemicals, selection of improved variety, plantation and water management – Arranging Demonstration plot (through nurseries and large producers), field days and exposure visits for the target producers – Developing promotional materials (poster, calendar, documentary film, leaflet, booklet etc.) for producers on improved varieties, profitable farming, eco-friendly practices in fruits cultivation etc. – Creating producers' group within the VCFs to get further reach to forward market (i.e wholesale market), to reduce transport cost, to minimize wastage/ quality loss and to strengthen producers' bargain capacity over the local farias (intermediary) – Collaboration with SRDI to scale up their existing fertilizer recommendation guide to incorporate in the target area and to promote it through CMC, local NGOs and community information service providers	– Producers get training on better farming technology, right use of fertilizer and agro-chemicals, selection of improved variety, plantation and water management – Beneficiaries as well as non-beneficiary producers learn about the better culture practices in fruits production to address farmers' lack of awareness of highly productive cultivation – Partners facilitating the intervention get better promotional coverage of their products or services – Producers' groups add efficiency in the value chain performance through their collective efforts to tackle fruits coming in from the Northwest Bengal (from districts like Natore, Comilla, Rajshahi, Dinajpur etc.) produced by commercial producers – SRDI facilitate in development of a fertilizer recommendation guide and provide other assistance to establish the best practices on balanced fertilization in the target area	– Fruits farmers adopt improved cultivation methods and better practices – Awareness on better culture practices get increased at both beneficiary and non-beneficiary level – Producers gain stronger market access and bargain power through collective approach in trading – Producers become aware of judicial use of fertilizers and the importance of balanced fertilization in restoring soil fertility	- Enhanced awareness and better knowledge on fertilizer usage, appropriate farming and management - Improved productivity or yield - Reduced wastage - Better quality of fruits leading to higher farm-gate price - Increased profitability - Increased fertility of soil
Leverage Point/Potential Partners: Seed companies; Fruits processing companies; Fertilizer companies; Agro-chemical companies; and Commercial nurseries **Support Service Providers:** Bangladesh Agricultural Research Institute (BARI); Bangladesh Forestry Research Institute (BFRI); Soil Resource Development Institute (SRDI); Horticulture expert/ institution; DAE Office; NGOs and Micro-finance institutions				

Table 27: Recommendations on Trading and Consumption (Fruits)

Constraints	Interventions	Output	Outcome	Impact
• **Higher overheads due to exploitative nature of traders and intermediaries over the producers** • **Lack of proper carrying and transport practices** • **Traditional approach in processing or packaging, which results in higher wastage and quality-loss of the produces** • **Higher price of produces due to inefficient VC functions** • **Lack of freshness or desired quality at customer end (esp. in urban area and distant districts) due to lack of proper storage, processing or transport facilities**	– Training for Fruits producers on appropriate harvest and post-harvest technologies, packaging, processing and effective transport techniques – Initiating contract farming through collaboration among the producers' groups and the national or regional agro-processing companies to produce processed fruits products – Arranging exposure visit for enthusiastic producers or lead farmers in other Asian countries where there are improved processing practices and technologies for fruits. – Building linkage among the Fruits producers' groups/ traders with urban super shops, food courts, restaurants, cafeteria, hotels etc.	– Horticulture expert or institution provides training to the producers on appropriate harvest and post-harvest technologies, packaging, processing and effective transport techniques to reduce wastage or quality-loss of the produces – National or regional agro-processing companies and exporters engage the target beneficiaries through contract farming under suitable monitoring to address the unprecedented price fluctuation – National and international institutes become partner in knowledge transfer programs on improved processing practices and technologies for fruits. Program participants (e.g. lead farmer) ultimately disseminate the knowledge to small producers	– Producers adopt cost-effective and appropriate harvest and post-harvest technologies, packaging, processing of fruits – Producers gain stronger market access and bargain power through collective approach in trading – Small producers become responsive in taking up improved processing practices and technologies for fruits – Customers get quality produces intact with desired freshness and food value	- Enhanced understanding on post-harvest technologies, packaging, processing and effective transport techniques - Better access to market - Stronger bargain capacity of producers - Reduced wastage - Better quality of produces and higher farm-gate price - Increased profitability across the value chain
Leverage Point/Potential Partners: Fruits processing companies; Urban super shops, food courts, restaurants, cafeteria, hotels etc. **Support Service Providers:** Bangladesh Agricultural Research Institute (BARI); Horticulture expert/ institution; DAE Office; Foreign institutions				

Chapter 10: Value Chain Analysis for Handicrafts

10.1 Brief Overview

Handicrafts products are widely appreciated at the consumer end both in national and international market. Due to poor access to the market and lack of appropriate know-how, the artisans in the project areas are still not being able toprovide products as per the market demand. The beneficiaries are traditionally accustomed to making products which, so they have the potential to be trained to produce better quality of handicraft products.

10.2 End Market Analysis

10.2.1 Main Market, Buyers &Competition

The consumers for handloom generally are common in both the segments as the product is generally used both simultaneously for functional and aesthetic or decorative values. Nearly 56% of the handloom products produced in the project areas in Chittagong, Rangamati and part of Cox's Bazaar go to the national level and are sold in the bigger metropolitan areas of the country for a good price. Another 24% of these handloom products are consumed at the divisional level which is Chittagong metropolitan area and around. The rest 20% is consumed in the localities within a short distance from the producers.

For the handicraft end market, there are only divisional and local levels of consumption. The local consumption is basically composed of functional utility items like baskets, hanging baskets, fishing nets, carry baskets, storage boxes, etc. It represents almost 40% of the consumption of products that are produced locally. The rest 60%, composed of both utilitarian and aesthetic products – e.g. household amenities and decorative items, goes to the divisional level in urban areas of the region.

10.2.2 Demand-Supply Situation

The market for handloom and handicraft are divided into urban and rural segmentation on the basis of usage pattern. In the rural areas the focus is on the functional utility of products; whereas, in the urban areas the focus is on the design or aesthetic values. The total value of the market of handloom and handicrafts of the greater Chittagong region is estimated to be around BDT 60 crore from the secondary literature reviews and in-depth interviews and almost 15% (BDT 9 crore approx.)of the supply comes from the project areas.

The demand for aesthetic products is seen in the urban areas at the national level. Dhaka, being the capital and the most densely populated area with a high disposable income, is the primary market for the aesthetic handloom and handicraft value added products. Other metropolitan areas like Chittagong, Rajshahi, Sylhet and Khulna are also appropriate for marketing these products. The demand is currently met by the medium and small national level organizations with substantial set up. Involvement of a lot of non-profit organizations (including NGOs) in this sector is significantly observable. The national level retailers of handloom and handicrafts; like Rang, Aarong, Jaatra, Kay Kraft, Bibiyana, Nagardola; partially source the products from the producers located in the remote areas of the country mostly from hill tracts to differentiate with originality and heritage. There are several distribution hubs in the region level that source the products from the remote areas and supply to the national level retailers. However, they mostly produce the crafts and loom items in the urban areas to keep a hands-on control over the quality and efficiency of the production. The aesthetic products are normally highly value added and are sold in the tourist spots in the districts of Rangamati, Bandarban and Cox's Bazaar.

The demand for products meeting the functional utility is mostly observed in the rural and semi urban parts of the region and the country. These products include: baskets to store and carry, bags, clothes, fishing nets, fences, etc. This demand is mostly met by the local suppliers. The producers source the raw materials from within short distance and sell their products locally. The excess demand that arises in the harvesting seasons (for carry baskets and storage baskets) is met by the paikers who fetch products from adjacent districts.

10.2.3 Market opportunities

The market opportunity for handloom and handicrafts is well formed as there is a big supply gap of products coming from the places they originated in. For example: the hand stitched clothes, locally known as *Thami*, made and used by the indigenous people of the hill tracts can attract the foreign and local tourists. The originality and heritage can be promoted to make the products known at a national and international level.

Additionally, the products made by beneficiaries located in the program areas can be brought to the national level market to ensure proper price – by making the input supplies conveniently available in the areas and strengthening the market channels from those areas to the distribution hubs. Furthermore, trainings can be provided to enhance quality and productivity.

10.3 Value chain map and analysis of value creation activities

The value chain of the Handicrafts market in Chittagong has been designed based on the information collected from the different market actors – producers, input suppliers, traders, government officials, etc – in the project regions.

10.3.1 Value chain – handicrafts and handloom sector overview

The value chain of the Handicrafts market in Chittagong has been designed based on the information collected from the different market actors – producers, input suppliers, traders, government officials, etc – in the project regions.

Business Environment – Underlying Factors

The underlying factors in the handloom and handicrafts value chain impacts the way it functions as a whole. The factors given below also create the underlying constraints of the value chain functions.

Gap between demand and supply

There is a gap between the producers and end- market, which is observed in the analysis. The producers and artisans are located in the remote areas and are mostly dependent on the collectors and farias to get the market information. Moreover, due to the lack of business motive to source from the remote locations the producers and artisans suffer from lack of market access.

Efficiency of production

The general practice of the producers and artisans, to produce and weave in a traditional manner, impacts the efficiency of production. The tranining and capacity building efforts carried out by the local NGOs are sporadic in nature and ineffective in terms of productivity enhancement. Therefore, the artisans and producers lack the modern know-how of production management.

10.3.2 Description of Value Chain Actors, Functions and Map

Input Supply

There are two types of input sellers in the handicrafts and handloom market. The first one is the raw material (bamboo, wood and thread) supplier to the handloom producers and the second one is the raw material (bamboo, cane, jute, paint, plastic, thread) supplier to the handicrafts artisans. The handloom producers generally create the tools to carry out their endeavors by themselves. Hence, they source bamboo and wood to assemble the handloom and weave with the tread.

The input sellers sell various raw materials like bamboo, cane, wood, plastic, jute, paint, thread, etc. to prducers/ artisans and entrepreneurs alike. This effort is often to a collaboration of the producers to achieve the economies of scale.

The observed gap in supply is because of the lack of awareness of the demanded final product quality. The linkage of input suppliers with artisans and producers is weak due to lack of information present in the market. The geographic distance also plays a vital role here. Moreover, the input suppliers collect these mostly from extractors who collect these supplies from the forests. As the value chain is not in a good shape, commercial input suppliers are not yet present in the market that grow bamboo and wood for this kind of supply. On the other hand, the farias and paikers of the input supply have a storng direct linkage with the extractors.

Production

The actors in this section of the value chain comprise of producers for handloom and artisans for handicrafts. Their production ranges from homestead to commercial level. They also provide design inputs from culture, trend and heritage. The changes in design input rarely come from the end market for designer products. However, the items with functional utilities are often modified according to the buyers' requirements. The producers sell the products to the local farias, and buyers ranging from regional to national level.

The artisans use traditional methods which do not produce consistent quality of products. These methods are flawed with inefficient technical work. As a result an economy of scale is rarely matched. Moreover, lack of business plan leads the artisans to predict market demand and act accordingly.

On the positive side, good aesthetic sense representing the heritage and culture of the locality through design works which shows great potential to work on community basis for larger orders.

Trading

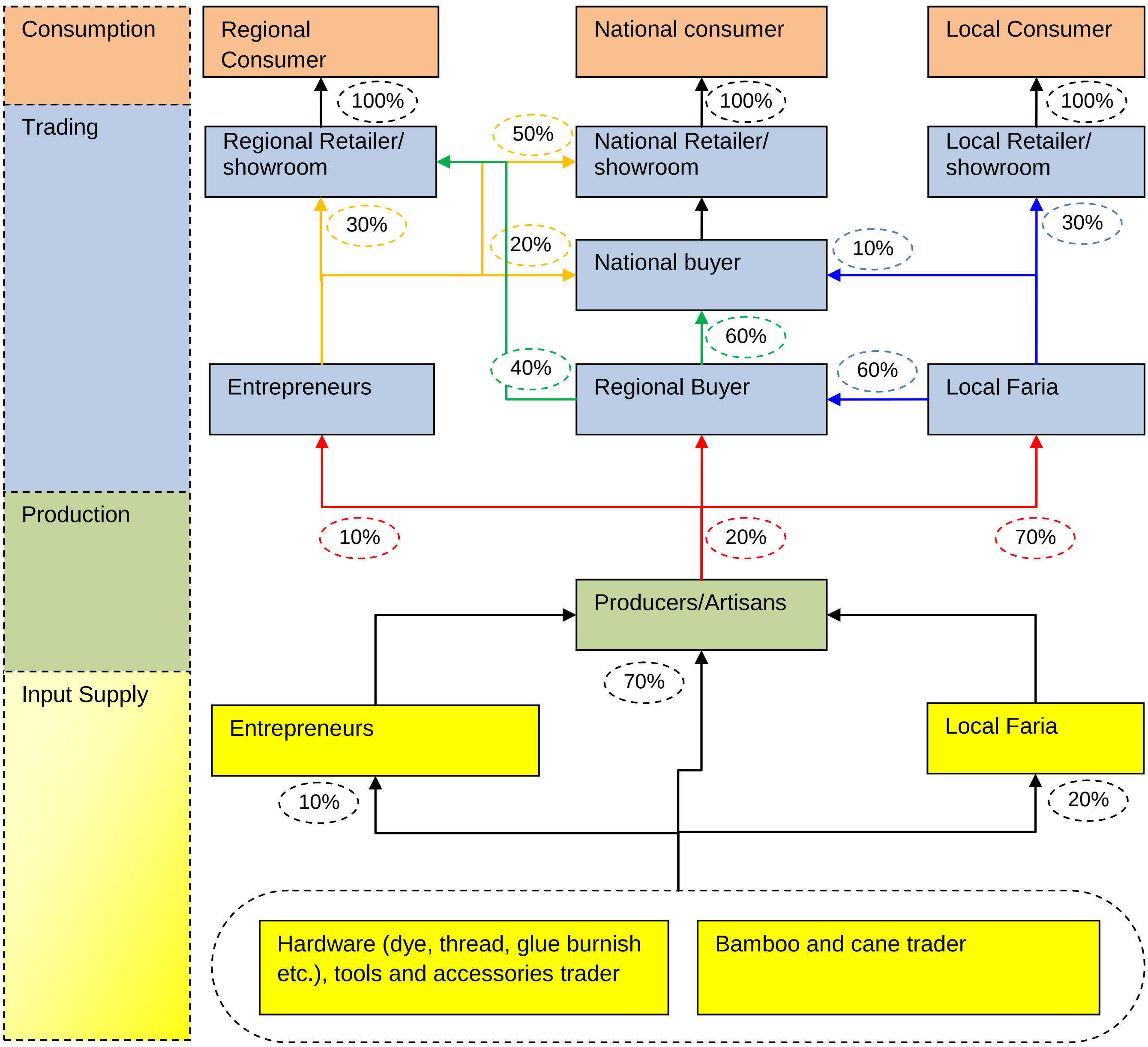
The current actors in the trading function of the value chain are entrepreneurs, local farias, regional buyers, national buyers, regional retailers/ showrooms, national retailers/showrooms, local retailers/ showrooms.

Though working on the same functional area, the entrepreneurs and traders operate differently. The entrepreneurs generally give advance/credit to the producers and artisans and provide specifications for the end-product in terms of measurement, design and efficacy. Hence, the entrepreneurs pay the price for value addition which is pre-negotiated. Conversely, the traders (farias, buyers, showrooms etc.) by and large buy the products from the producers and artisans at a price negotiated on the spot. Another operational difference is in terms of the control over the manufacturing process. The entrepreneurs enjoy full command over the manufacturing, whereas the traders depend on the available products.

There is an observed market gap which occurs from the lack of business motive to source from the remote locations. There are other gaps, like – lack of training initiatives to enhance the productivity and efficiency of the artisans. The improper dissemination of production technique to keep competitive edge over peers also affects the growth of technical know how of the whole sector. This also forces the link between producers and traders to be weak.

On the other hand, the access to fund and technical information is strong. This privilege is enjoyed by the entrepreneurs and traders because of their operational scale. Access to national level market is also strong.

Figure 13: Value Chain Map for Handloom & Handicrafts[16]



16 *Primary data: in-depth interviews, questionnaire survey*

10.4 Performance of the Value Chains

10.4.1 Value Chain Actors and Performance

Table 28: Handicrafts and Handloom Value Chain Actors and Performances

	Input Supply	Production	Trading	Support services
Actors	Input Sellers for Handloom (bamboo, wood and thread), Input Sellers for Handicrafts (bamboo, cane, jute, paint, plastic, thread)	Producers and Artisans	Entrepreneurs, Local Faria, Regional Buyer, National Buyer, Regional Retailer/ Showroom, National Retailer/Showroom, Local Retailer/ Showroom	Transportation, NGO, Training and Capacity Building
Functions	▪ Selling various raw materials like bamboo, cane, wood, plastic, jute, paint, thread, etc. ▪ Selling the inputs to producers/ artisans and entrepreneurs alike ▪ Sometimes created by collaborative approach of the artisans to achieve economy of scale while purchasing	▪ Producing handloom and handicrafts at homestead and commercial levels ▪ Providing design input into products from culture, trend and heritage ▪ Selling the products to local farias, regional buyers and larger entrepreneurs	▪ (Entrepreneurs) Giving credit to producers and artisans in the forms of raw material or money ▪ Collecting products from salaried and individual artisans ▪ Keeping control over the manufacturing process ▪ Bearing the cost of transportation ▪ (Traders) Collecting products from producers and artisans ▪ Sells products to national level retailers and consumers. ▪ Takes risk of products being unsold	▪ Providing training and capacity building techniques to artisans and producers ▪ Providing funds in the form of microcredit or other modes of finance ▪ Providing carrying support of raw materials and final products
Performance (-)	▪ Input suppliers not aware of the final product quality demanded ▪ Weak direct linkage with artisans and producers ▪ Mostly extractor (bamboo, wood) who depends on the natural resources	▪ The artisans use traditional methods which do not produce consistent quality of products ▪ Lack of efficient technical work ▪ Lower volume of production defies the economy of scale ▪ Lack of proper business plan behind production	▪ Lack of business motive to source from the remote locations ▪ Lack of training initiatives to enhance the productivity and efficiency of the artisans ▪ Improper dissemination of production technique to keep competitive edge over peers	▪ Training initiatives are sporadic and ineffective ▪ Government funds and credit programs are lacking ▪ Inefficient monitoring of NGOs to enhance production
Performance (+)	▪ Strong distribution channel to supply bamboo and cane from distant natural sources ▪ Strong direct linkage with	▪ Good aesthetic sense representing the heritage and culture of the locality through design works	▪ Access to fund and technical information is strong ▪ Access to national level market is strong	▪ National level fairs and exhibitions are organized ▪ NGO microcredit and financing is available

	entrepreneurs and local farias	▪ Have potential to work on community basis for larger orders

Value Chain performance investigated above on their actors and their functions revealed some strengths and weaknesses of the handloom and handicrafts value chain to impact the beneficiaries. Further analysis of the factors affecting the performance of the value chain is given below:

10.4.2 Business Enabling Environment

In general, the business environment within this region is adverse to business growth in spite of great potential to augment the value addition. The producers are contented with the traditional approach towards manufacturing with low productivity. The market is largely controlled by the traders, who do not have enough economic incentive to source from the remote areas. As a result a great portion of potential is still untapped.

The sector itself holds great potential in terms of design input which upholds the heritage of the region.

Gender and cultural norms

The presence of ethnic minorities in the region gives it a mixed cultural environement. The women in the families are traditionally much more empowered and economically active. The work groups of artisans and producers are often led by women. Men in the remote areas are more dependent on extraction than women whereas the women are more involved in the handloom weaving and crafting.

10.4.3 Vertical Linkages

Since the upscaling of production is not observed, the vertical linkages within the beneficiaries are low.

Access to Markets

The beneficiaries in the region lack the access to market in general. The dependence on the collectors and traders makes it complex for the producers to understand the market dynamics. The limited number of actors in the trading tier increases the bargain power of the traders over producers.

Input Access and Quality

The access to input is available in the market. However, the quality of input is questioned. The supply of input is largely dependent on the extractors who do not have the control over quality. Hence, the producers depend on the quality of the input available in the market.

Access to Market Information

Actors in the production tier depend on the traders to get the market information. The beneficiaries do not generally access the end consumers. Though the traditional design inputs is much accepted by the consumers, the scope for fine tuning and tweaks to add value is lost.

10.4.4 Horizontal Linkages

Horizontal linkages in the production tier are stronger than that in input selling, trading and support service tier.

Types & forms of collaboration & competition

The collaborative approach towards manufacturing as a group to get higher output is common in the region. The producers often form groups to cater large orders of handloom and handicrafts. Moreover, the producers tend to form larger community comprising of work-groups to gain higher bargain capacity when buying inputs. The most common formation is 20-25 artisans working together.

At the trading tier, this kind of collaboration is uncommon, as the entrepreneurs and commercial traders are inclined to operate solo.

Roles for the targeted beneficiaries

The traders and entrepreneurs prefer larger workgroups because of higher volume and assurance of quality. The risk of failure is also diversified because of larger number of artisans and producers working together. In the Kaptai and Karnafuli sites it is very common for the collectors to look for group leaders to buy the products.

10.4.5 Scopes for Upgrading

Input Supply: Handicraft producers or artisans collect a wide range of inputs depending on their crafted products from different local and regional markets. Sometimes, primary traders provide them the necessary inputs. The project can collaborate with existing and potential input retailers, showrooms and handicraft enterprises and work for the capacity development of the local input suppliers on appropriate techniques and better practices in manufacturing of suitable handicrafts. Input sellers would ultimately disseminate the know-how to the artisans as embedded service.

Production: In the production level, there are plenty of scope to alleviate efficiency and productivity of the artisans. In loom textile production, traditional waist-looms can be modified in such a way that it can increase productivity at least 40% to 60%. Other than waist-loom, improved handlooms may add further efficiency and physical comfort of the artisans.

Different institutions like BSCIC; Jute Diversification Promotion Center (JDPC); SME Foundation; Upazila Jubo Unnayan office are providing different trainings on handicrafts. These organizations can play an additional role in building new workforces in the selected area for diversified handicraft products. Different handicraft entrepreneur and artists are also interested in providing basic and advanced trainings on design, finishing, processing and overall product development of handicrafts.

Trading: Formation of artisans' group may potentially strengthen the bargaining capacity of the producers and ensure better access to markets. Capacity development initiatives would create a more stable channel of procurement and distribution. Institutional linkages with different handicraft research and training institutions would help the artisans gain better techniques and productivity. Linkages with different nature tourism sites and enterprises like hotels, resorts, boutique shops, souvenir corners (esp. situated in Rangamati, Banderban, Chittagong, Cox's bazar, Dhaka) may increase the trade volume of handicrafts from the artisans' groups.

10.5 Assessment of the regulatory environment and support services

Handicraft production is a widely practiced activity across the study sites in Chittagong Southeast Zone-1. The protected areas (PA) of this zone - Dudpukuria-Dhopachari Wildlife Sanctuary, Chunati Wildlife Sanctuary and Kaptai National Park - are typically tropical evergreen or semi-evergreen forest. Local people especially women from both the ethnic and Bangla-speaking communities in this zone possess inherent skill and fascination for getting involved in various handicrafts practices.

Public Services: The Government has been providing assistance towards development of the handicraft sector and placed this industry as one of the 'thrust sectors' at number 29 of the thrust sector list in Annex 1 of Industrial Policy 2005 and at number 19 in Annex 2 of the Industrial Policy 2010. Under the small and cottage industries development programs, selected product categories such as cane and bamboo products, mats, pottery etc. are envisaged to receive some concessional benefits along with special investment incentives and financial facilities, tax exemptions and depreciation allowances to the thrust sector industries. Other than that, institutions like Bangladesh Small and Cottage Industries Corporation (BSCIC), Banglacraft, ECOTA, Jute Diversification Promotion Center (JDPC) are in a position to deliver some support services such as skill development training and design improvement services etc. However, there is no extensive network of public and private institutions that can deliver comprehensive package of support services to the Handicrafts sector.

Local Upazila Jubo Unnayan offices in the study area show their driven mandate to enhance the involvement of local communities in handicrafts sector. They inspire the new generation (aged between 18-35 years) and women to get occupied in producing different handicrafts. They provide basic trainings on handicrafts and also offer convenient loans to the training participants on the inception of their production ventures.

Forest officials also welcome the expansion of handicrafts industry among the residing communities in Chittagong Southeast Zone-1. However, they raised their concerns to the matters like forest land encroachment for bamboo/ cane collection and illegal felling of endangered species of bamboo and cane due to lack of awareness of the extractors. In such circumstances, exploitation in and around the protected areas should be co-managed effectively. An institutional change is also necessary within the Forest Department, from administrative roles to those of facilitators, given the more public oriented approaches taken in the past and present like social forestry and co-management initiatives.

Other Non-Government Organizations: Major NGOs that operate in the locality are Grameen Bank, IDF, BRAC, SHED, ASA, CARITAS, Green Hill, UNDP etc. Besides, Bangladesh Krishi Bank and BRDB's Rural Livelihood Project (Palli Jibikayan Prokalpa) also operate in the study area. The major activities of the NGOs are concentrated on health, educa tion and alternate income generation. Most of them have credit programs exclusively for the women. Bangladesh Krishi Bank and Palli Jibikayan Prokalpa of BRDB and several NGOs provide micro credit to the local people for improving the livelihood.

The gaps in the support services include the sporadic and ineffective provision of training. Moreover, inefficient monitoring and follow up done by the NGOs lessen the benefit of the training programs. Additionally, though there are options for microcredit run by NGO, a lack of government effort with uncomplicated conditions is observed.

On the contrary, there are several platforms present that, if managed effectively, might assist the beneficiaries to achieve their business goals. These platforms include national and regional level fairs and exhibitions to promote the root level artisans.

10.6 Poor/Resource Dependent People, Youth and Gender Analysis

Handicrafts sector was found to be one of the most potential areas to be intervened through value chain development in Chittagong Southeast Zone-1. The poor and landless households can be suitably selected for the potential interventions of the project, as the production and processing of this value chain requires very minimal or just homestead space.

Moreover, most women showed their intent to get involved in manufacturing of different handicrafts items. The study already observed that women in the target area mostly possess inherent skills in making handicrafts and they get pleasure from crafting alongside their daily household chores.

The youth of the project area also showed their interest in seizing the prospects of handicrafts sector. The present investigation found thatmore than 70% of beneficiaries in the target zone are aged from 20 to 40 years old. So, involvement of youth in the value chain is definitely potential.

10.7 SWOT Analysis

Table 29: SWOT Analysis for Handicrafts and Handloom

Strengths ▪ Traditional practice for homemade handicrafts ▪ Natural sources of raw materials for bamboo, cane, thread, etc. ▪ Locally produced handicraft products have both ethnic (hand woven clothes, show pieces, ladies ornaments etc.) and functional (carry basket, fences, fishing net etc.) utilities.	**Opportunities** ▪ Supply-demand gap in countrywide ethnic product market offers a great promise for product placement. Additionally these can be exported to the international market of ethnic products. ▪ Functional products can be consumed in local markets within the region, in place of products from other regions of the country.
Weaknesses ▪ Commercial production of handicrafts is little to nonexistent ▪ Traditional less productive approach to handicrafts making leads to lower productivity ▪ Very little effective government and private initiatives to train the producers ▪ Non-profit and NGO driven productions lack commercial viability	**Threats** ▪ The town based commercial production houses are meeting the demand of functional products in the local market ▪ Due to information gap interests of entrepreneurs in the field are not being attracted towards this region

10.8 Constraints Analysis

Table 30: Constraints Analysis for Handicrafts and Handloom

Value Chain Functions	Constraints
Input Supply	▪ Inadequate information and knowledge on appropriate inputs (basic tools, accessories etc.) and their effective usage ▪ Unavailability of user-friendly and productive equipments ▪ Poor promotion of improved tools and techniques
Production	▪ Insignificant knowledge on proper usage of inputs and effective techniques ▪ Lack of training facilities on design, product development and appropriate crafting methods ▪ Poor management in processing and finishing of the products ▪ Low productivity due to lack of improved techniques ▪ Poor access to market in terms of physical communication and transportation as well as poor bargain capacity of the artisans ▪ Low capacity in product innovation and diversification
Trading	▪ Lack of market information and poor or no connection with regional and national end market ▪ Poor knowledge in estimating or understanding consumers' demand
Consumption	▪ Lack of quality and well-finished merit in produced goods or crafts at consumer level

10.9 Recommendations

Addressing the constraints observed in different functional stages of Handicrafts value chain, a set of intervention plans is tabulated below along with their potential outcome and impacts. Prospective partners in implementing the interventions as well as some potential support service providers are also suggested in the table.

Table 31: Recommendations on Input Supply (Handicrafts and Handloom)

Constraints	Interventions	Output	Outcome	Impact
• **Inadequate information and knowledge on appropriate inputs (basic tools, accessories etc.) and their effective usage** • **Unavailability of user-friendly and productive equipments** • **Poor promotion of improved tools and techniques**	– Training program on better techniques and usage of appropriate tools for input sellers or traders – Developing linkage between machinery manufacturers or suppliers (loom, stand and other equipments) and Handicraft experts or respective institutions, specialized NGOs etc.	– Input sellers disseminate the knowledge on better techniques andusage of appropriate tools for handicrafts to the artisans as embedded service – BSCIC and other potential small industry entities provide necessary knowledge and technical supports for training programs and knowledge dissemination – BFRI impart a guideline on judicial use of natural or forest resources like bamboo and cane	– Artisans get improved knowledge on appropriate inputs and their right usage – Input retailers enhance their supply of necessary inputs and develop a better and healthy business linkage with the artisans – Artisans adopt improved crafting methods and eco-friendly better practices for production	- Better knowledge of artisans on improved techniques andeco-friendly usage of natural inputs and appropriate tools - Improved productivity - Enhanced quality of hand-made products - Increased profitability
Levergae Point / Potential Partners: Handicraft tools and equipment manufacturers; Input sellers (bamboo, cane, hardware etc); **Support Service Providers:** BSCIC, Bangladesh Forestry Research Institute (BFRI); SME Foundation, Upazila Jubo Unnayan office; Handicraft Enterprises; NGO				

Table 32: Recommendations on Production (Handicrafts and Handloom)

Constraints	Interventions	Output	Outcome	Impact
• **Insignificant knowledge on proper usage of inputs and effective techniques** • **Lack of training facilities on design, product development and appropriate crafting methods** • **Poor management in processing and finishing of the products** • **Low productivity due to lack of improved techniques** • **Poor access to market in terms of physical communication and transportation as well as poor bargain capacity of the artisans** • **Low capacity in product innovation and diversification**	– Skill development programs for small handicraft producers/ artisans on better crafting, effective usage of tools and machineries, product design and finishing etc. – Developing training materials (documentary film, leaflet, booklet etc.) for artisans on design, better crafting, effective use of tools, product finishing etc. – Training of Trainers (ToT) for veteran/ lead artisans on modern design, branding, diversification, processing etc. – Creating artisans' group within the VCFs to get further reach to forward market (i.e wholesale market), to reduce transport cost, to minimize wastage/ quality loss and to strengthen artisans' bargain capacity over the local intermediaries – Linkage between Artisans' groups and different Handicraft institutions for capacity development on different diversified products like potteries, jute-made products, basketry with plant leaves/grasses, hand-made paper and paper products etc.	– Artisans get trainingson better crafting, effective use of tools, product finishing etc. – Partners facilitating the intervention get better promotional coverage of their products or services – Trained artisans ultimately disseminate the know-how and skills on design, better crafting, effective use of tools, product finishing etc.to the small or homestead producers – Artisans' groups add efficiency in the value chain performance through their collective efforts – BSCIC, SME Foundation, Upazila Jubo Unnayan office, JDPC, NGOs/Projects or interested Handicraft enterprises/ experts disseminate new technologies on different diversified products like potteries, jute-made products, basketry with plant leaves/grasses, hand-made paper and paper products etc.	– Artisans adopt improved crafting methods and better practices – Convenient equipments and tools, innovative crafting methods and eco-friendly practices for production of handicrafts get familiar and popular across the value chain – Artisans gain stronger market access and bargain power through collective approach in trading – Artisans become capable of producing inventive and diversified crafts	- Enhanced awareness and better knowledge on better crafting, effective usage of tools and machineries, product design and finishing - Better productivity - Improved and diversified quality of handicrafts - Increased profitability

Levrage Point / Potential Partners: Handicraft enterprises; Fashion entities; Interior design houses; NGOs/Projects
Support Service Providers: BSCIC;Jute Diversification Promotion Center (JDPC); SME Foundation; Upazila Jubo Unnayan office

Table 33: Recommendations on Trading and Consumption (Handicrafts and Handloom)

• **Lack of market information and poor or no connection with regional and national end market** • **Poor knowledge in estimating or understanding consumers' demand** • **Lack of quality and well-finished merit in produced goods or crafts at consumer level**	– Initiating collaboration among the artisans' groups and the handicraft enterprises/ showrooms/ retailers – Building institutional linkage among the handicraft producers' groups/ traders with the relevant support service institutions. – Ensuring the participation of artisans' groups in different trade fairs and expositions – Developing linkage between artisans' groups/ traders and tourism enterprises	– Handicraft enterprises, showrooms, retailers, fashion entities; interior design houses; NGOs/Projects provide technical and input supports to the artisans and buy back their products – BSCIC, SME Foundation, Upazila Jubo Unnayan office, JDPC, Banglacraft, provide technical supports and business information. They also provide guideline on efficiency, profitability and quality of products as well as calculating materials and costs. – Export Promotion Bureau (EPB), BSCIC, SME Foundation, JDPC, Banglacraft, NGOs/ Projects provide supports to the artisans' groups for taking part in regional, national and international trade fairs and expositions – Tourism sites and enterprises like hotels, resorts, boutique shops, souvenir corners (esp. situated in Rangamati, Banderban, Chittagong, Cox's bazar, Dhaka) trade handicraft products from the artisans' groups/ traders	– Artisans gain stronger market access and bargain power through collective approach in trading – Small artisans become responsive in taking up improved crafting as well as best business practices – Customers get a diversified range of handicraft products with desired quality and finishing – Innovative and diversified handicrafts get familiar and popular at both regional and national/ international market	- Enhanced awareness and better knowledge on better crafting, effective usage of tools and machineries, product design and finishing - Better productivity - Improved and diversified quality of handicrafts - Increased profitability

Leverage Point / Potential Partners: Handicraft enterprises, showrooms, retailers, fashion entities; interior design houses; NGOs/Projects
Support Service Providers: BSCIC;JDPC; SME Foundation; Export Promotion Bureau (EPB); Banglacraft; Upazila Jubo Unnayan office

Chapter 11: Status of Ethnic Communities

Southeast Zone-1 (Chittagong) is comprised of three protected areas (PA): Dudpukuria-Dhopachari Wildlife Sanctuary (DDWS), Chunati Wildlife Sanctuary (CWS) and Kaptai National Park (KNP). The forests are tropical evergreen or semi-evergreen. The overall topography of these sites is undulating, with elevations ranging from slightly too highly elevated. The sites are situated around the hilly terrain of Chittagong Hill Tracts (CHT), which is a unique part of the country in terms of its landscapes and people. This region is regarded as home to a diversified population of indigenous or ethnic communities.

Major Ethnic Communities: The major ethnic communities in DDWS are Chakma, Marma and Tripura while in CWS ethnic population is comprised of Rakhain and Rohingya. The indigenous groups in KNP are majorly Chakma, Marma and Tanchangya.

Livelihood: The average family member of each family is 5-6 with monthly income ranges from Tk.2000 (US$ 33) toTk.2500 (US$ 42). Agriculture is the main occupation in this area. Both male and female members of the households take part in the agricultural and homestead chores. Common crops are paddy, different vegetables, fruits, culinary plants, spices, maize and medicinal plants. Though Swidden (jhum) cultivation in the reserve forest is prohibited, this specialized farming is still practiced by a major portion of the ethnic population in the region especially in Kaptai NP. In this cultivation, farmers cut down trees, shrubs and herbs in a selected area, burn the plants, and then sow seeds after the first pour of the year. After cultivating a particular area, the land becomes fallow for years. However, through interventions of IPAC and other development efforts, they are gradually being well-sensitized to reduce the span of jhum cultivation through adapting alternative livelihood.

Other income generating activities among the ethnic people of the study area include fishing, pig rearing, poultry rearing, working in rubber garden, producing handicrafts etc. A few of them are involved in different services, small trades and daily labor.

Status of Natural Resource Extraction: Majority of the ethnic people extract wood and bamboo from adjacent forest areas. Firewood, fodders, leafy vegetables, bamboo shoots and culinary plants are regularly extracted from the forests; however, timber is now being collected at a much reduced rate. But wildlife is still endangered due to illegal trapping and poaching by the ethnic communities. For different rituals, protein intake and trading of wild animals, the indigenous people hunt wild boar, pangolin, deer, different lizards and wild birds. Nonetheless, it was observed that co-management programs of IPAC and FD resulted in a declining trend of natural resources extraction from the protected areas studied.

Scope of Integration into the Selected Value Chains: Ethnic communities in Southeast Zone-1 (Chittagong) are diversifying their income generating activities and getting proficient in mainstream value chain practices prevailing in the region. Alongside the Bangla-speaking people they are also emerging for the livelihood development and exploiting opportunities.

Throughout the value chain analysis in this region, it was observed that the ethnic communities are competent enough to adopt new strategies and best practices for the selected value chains – 1) Vegetables and Medicinal Plants; Fruits; Handicrafts and Income activities.

In DDWS, a good number of Marma and Chakma are shifting to vegetables farming as well as fruit cultivation. For instance, Upchi Mo, aged 36, from Dudhpuria, has now become an icon for his tremendous success in cultivation of strawberry and dragon fruit in the locality. His achievement was telecast in several electronic media. In farming of medicinal plant, especially in KNP, ethnic people showed an expanding yield in last couple of years.

Ethnic women of this region are highly recognized for their skills in producing loom textile, basketry, bamboo and cane products etc. In Chunati WS, Rakhain and Rohingya women are efficient in weaving fishing net and traps. Their inherent skill and meticulous crafting expertise, in spite of very poor access to handicrafts market, show incredible scopes of integration in the value chain.

Indigenous people, particularly the pool of youth, were found most suitable for carrying out the roles and duties of trekking guides or eco-tour guides. Their native knowledge and conscience in the natural forest trails would be unparallel to any other individuals. For expansion of nature tourism facilities in the region, these communities are the sole performers to present a ethno-cultural display or show.

Considering the rationales and the context of CREL objectives, the project should focus on the effective participation of ethnic communities in the suggested value chains programs in Southeast Region-1.

Part IV: Annex

Annex 1: Terms of Reference

1. Background

Climate-Resilient Ecosystem and Livelihoods (CREL) is an USAID funded project implemented by a team led by Winrock International. CREL project will scale up and adapt successful co-management models to conserve ecosystem and protected areas (PA's) in Bangladesh, improve governance of natural resources and bio-diversity, and increase resilience to climate change through improved planning and livelihoods diversification. CREL will build the capacity of resource users for financial and entrepreneurial literacy so they participate profitability in value chain activities that will increase access to inputs, credit, markets, information, and improved technology. The result will be viable livelihoods and enterprises that increase incomes, sustain resources and productivity, and improve resiliency, especially among marginal and vulnerable populations. A brief background of the project is attached with TOR as Annex I.

CREL aims to provide sustainable alternative livelihood opportunity to the CREL target beneficiaries who are disadvantaged, poor/ultra poor, women, youth and highly dependent on natural resources through strengthening suitable and climate resilient value chains.

2. Objectives of the Study

The main objective of the study is to find out the potential Value Chains and analyzing the Value Chains to come up with strategies and interventions to ensure sustainable livelihoods for the beneficiaries of the project that lead to reduce pressure on natural resources. The study will be conducted in two phases. Specific objectives of each Phase of study can be defined as follows:

Phase 1: Analyze all potential Value Chains and select 3 Value Chains for full analysis from each region according to the criteria mentioned below;

- Climate Resilient – Value Chains that are climate resilient and/or has the potential to reduce risk from climate change threats.
- Potential to reduce extraction of natural resources
- Ensured Market Demand and/or Opportunity to link with markets
- Potential to increase income of the marginal and vulnerable populations who have small amount of land or totally landless
- Potential to create employment throughout the value chain
- Potential to incorporate women and youth
- Potential to involve MSMEs
- Potential for growth
- Potential to be benefited from the available support services
- Suitable for the economically disadvantaged area particularly in the landscape/wetland area of CREL regions

Phase 2: A detail analysis of the selected value chains to get a vivid picture of each value chain and to formulate the strategy/interventions to strengthen the value chains and create scope for sustainable livelihoods.

3. Scope of Work

Working area for this study is Bangladesh. Following cites will be covered in the study:

Zone	District	Upazila	Site
Northeast	Habiganj	Chunarughat and Madhabpur Chunarughat	Satchari NP RemaKhalenga WS
	Maulavibazar	MaulavibazarSadar and Sreemangal Kamalganj and Sreemongol Kularua, Juri, Baralekha, Fenchuganj&Golapganj	HailHaor Lawachara NP HakalukiHaor ECA
	Sunamganj	Dharmapasha, Tahirpur	TanguarHaor ECA (Only based on secondary literature)
	Sylhet	SylhetSadar, Goainghat	Kadimnagar NP
Southeast Zone 1	Chittagong	Lohagara,Banshkhali	Chunati WS
	Rangamati and Banderban Rangamati	Chandanise, Rangunaia, BanderbanSadar, Kaptai	Dudhpukuria- Dhupchari WS Kaptai NP
Southeast Zone 2	Cox's bazar	Cox's bazar Sadar,Ramu Chakaria, Teknaf Ukhiya	Himchari NP Fashiakhali WS Medhakachapia NP Teknaf WS Inani proposed NP
Southwest	Bagerhat	Sarankhola, Mongla, Morrelganj and Rampaul	Sundarbans (West)
	Khulna	Dacope and Koyra	SunderbanECA
	Satkhira	Shyamnagar	Sundarbans (East)

Innovision will assess all available Value Chains of the project areas to shortlist the Value Chains which are close to the criteria mentioned in the objectives. In addition to the mentioned criteria, Innovision will need to assess the available backward & forward linkages, business & financial services, infrastructure and enabling environment in project sites which are directly linked with the Value Chains. After the initial assessment, Innovision will submit a report elaborating the selection process of the shortlisted Value Chains. Once the value chains are shortlisted, Innovision will do an in-depth analysis of each value chain. This analysis should be in line with USAID guideline for analyzing value chains provided in the website http://microlinks.kdid.org/. CREL project will need separate report for each of the selected value chain according to the following guideline:

- End Market Analysis (Main market, buyers, competition) and market demand
- Descriptions of the Value Chains (Actors, their roles and functions, map and relationships of the actors and service providers)
- Performance of the Value Chains and Scope for Upgrading (performance in each stage, Cost-benefit, value addition)
- Poor/resource dependent, youth and gender Analysis and scope of integration in value chains
- Assessment of Business , Financial and other services
- Assessment of Policy/Regulations

- SWOT Analysis
- Summary of the constraints
- Recommended Strategies/Interventions

Though market demands will be assessed and incorporated in Value Chain Study report, CREL will need a separate report on market demand assessment of each Value Chain.

4. Timeframe

Task	Deliverables	Deadlines
Phase 1: Selection of Value Chains	Report on detailing the selection process and selected Value Chains	20th Calendar day
Phase 2: Full Analysis of the selected Value Chains	Report on full analysis of the selected Value Chains.	70th Calendar day

Innovision will need to provide a detail work plan mentioning breakdown of the activities with dates. Alteration of dates during the implementation stage should be made in consultation with the Livelihood team of CREL/Winrock International.

5. Methodology

Innovision will propose methodology for the each phase of the study. However, proposed methodology should include following steps (not exhaustive):

- **Desk Research**
- **Field Study and analysis of the findings**
    - **FGD**
    - **Interview of different actors**
- **Key Informant Interview**
- **Workshop**

Innovision will consult with the livelihood team of CREL to finalize indicative sample size and methodology.

6. Deliverables

The deliverables to be provided by Innovision under the PO are the following:

Phase 1:

- Summary findings of the desk research
- Matrix of the key findings from the stakeholders workshop(if any)
- Detail report on selected value chains elaborating selection process and methodology
- Presentation at CREL on selection process and selected Value Chains

Phase 2:

- Report on desk research(with draft value chains)
- Workshop report
- Report on full analysis of each of the selected value chains (including ecotourism)
- Market Demand Assessment Report
- Database of the study (including all filled questionnaire, list of the interviewees)
- Presentation on the findings of the study

7. Resource Facilities by Winrock, CODEC, CNRS and NACOM

To supervise the study, Winrock and their partners will use their own resources. However, Livelihood Officer, Market Development Officer and Livelihood Facilitator will assist Innovision in conducting the study. This assistance include, arranging interview, facilitate interview process and organizing workshops at regional level.

8. Key Contact Person

Mr. Sadruddin Imran, Chairman & CEO of Innovision will be key person from the vendors side while CREL project's Enterprise and Livelihood Manager Mr. Mahmud Hossain will be the key contract person for the this activity.

All Communication with GOB and USAID must be coordinated with the Chief of Party of Project, CREL.

Annex 2: Detailed field plan for all regions

CREL Value Chain In-Depth Analysis – Cihittagong: SER-1 Innovision Team- Sajedul Islam (SI), Sadruzzaman Tamam (ST), Faiz Taimur (FT) and Rubaiyath Sarwar (RS)			
Day	**Activity**	**Personnel**	**Night**
Thursday	**Travel from Dhaka to Chittagong** (Sajed), Sajed and Taimur will meet CREL informally	**SI-FT**	CT(
Friday	**Travel from Dhaka to Chittagong** , Sadruzzaman Tamam from Innovision	**ST**	CT(
Saturday	**Discussion with Codec Official** regarding our plans, such as required types of actors of selected value chain, detailing the questionnaire, responsibility of the Codec staffs	**SI-FT-ST**	CT(
Sunday	**Start for Bandarban**, interview with Vegetable (2 farmers) and fruit producer (2 farmers), Skilled based profession (2) -- **DDWS**	**SI-FT-ST**	Banda
Monday	**Interview** of Input sellers (3), Forest extractors (3), Arotder (1), Retailers(1), Faria (1), Eco Tourism (1), handy craft (3), Medicine Plants (2 producers), Faria (2) -- **DDWS**	**SI-FT-ST**	Banda
Tuesday	**Rest of DDWS** (complete)... Back to Chittagong	**SI-FT-ST**	Banda
Wednesday	**Break for a day**	**SI-FT-ST**	CT(
Thursday	**Start for Jaldi**- Vegetable Producer (2), Fruit Producer (1), extractors (2), Input sellers (2), Faria / Arotder (1), Government officials (agriculture and Jubo Unnoyon), Eco tourism (1)	**SI-ST**	CT(
Friday	**Start for Chunati**, fruits producer (2), Vegetable producer (2), arotder (fruits-1), arotder (vegetable-1), input seller (fruit-1,vegetable-1), Govt/NGO/other officials	**SI-FT-ST-RS**	CT(
Saturday	**Start for Kaptai**- vegetable producers (2), fruit producers (2), medicinal plan (1), handy craft (2), handy craft buyer (1), input sellers (1), local retailers (fruits-1, vegetable-1), Government Official (agriculture and Jubounnayan-1	**SI-ST-RS**	CT(
Sunday	**Start for Karnaphuli** - Vegetable producers (2), fruit producers (2), medicinal plan (1), handy craft (2), handy craft buyer (1), input sellers (1), local retailers (fruits-1, vegetable-1), Eco-tourism (1)	**SI-FT-ST-RS**	CT(
Monday	**Break for a day**		CT(
Tuesday	**Team discussion**	**SI-FT-ST-RS**	CT(
Wednesday	**Back to Dhaka**	**SI-ST-RS**	Flight tc

Annex 3: Data collection tools for all regions

Checklist for Value Chain Selection and Beneficiary Profiling

CHECKLIST - FGD

Area Details:

01. What are the common characteristics/standards of livelihood?

Major occupations (both VCF and non VCF members) with ranking by population
Literacy/ Access to Education (School, college, madrasa or other institutions)
Access to Medical support, Tube-well, Drinking water & Sanitation facilities
Access to Electricity, TV, Radio, Mobile phone etc. facilities
Land Use and Ownership
Other features

02. What are the common agricultural characters and practices in the area? What are the major crops (most profitable) cultivated in the selected area?

03. Individual Farmer Info:

Crop name →	**1:**	**2:**	**3:**
• Area farmed (Decimals)			
• Yield (Kg)			
• Cost of production (BDT.)			
• Quantity sold (Kg.)			
• Revenue (BDT.)			

04. What are the forest extractions and period throughout the year?

Season	**Winter**		**Summer**		**Monsoon**	
Months	Nov- Dec	Jan-Feb	Mar-Apr	May-Jun	Jul-Aug	Sep-Oct
1.	-	-	-	-	-	-
2.	-	-	-	-	-	-
3.	-	-	-	-	-	-
4.	-	-	-	-	-	-
5.	-	-	-	-	-	-

05. What are the common issues of forest resource extraction?

Permit issues and practices

Risks *(Natural, Dacoits, law enforcing agencies and others)*

Other observations:

06. Existing Value chains: <u>*Pathway*</u> ***(a→ b→ c)***

1.

2.

3.

4.

07. What is the scenario of access to agricultural inputs, livestock and market systems?

Seeds, Fertilizers, dairy & poultry input, medicines, instruments/machineries, Know-how etc

Market practices and systems (if any): *Loan, Dadon, Contract growing etc. or others*

Market Features: (market places, transport, distance, variety of buyers etc.)

08. What types of natural (climate) disasters do the people face? How do they response?

Type and occurrence: (Flood, river erosion, rainfall, tidal surge, cyclone etc.)

Access to disaster forecast and understanding ***Safety/survival measures*** ***Nature of Migration – if any (both <u>geographic</u> and <u>occupational</u>) due to disaster***

09. What are the common understandings, adaptability, preparedness/intention about community-based climate resilience and new practices and forest co-management systems?

10. What are other projects and NGO activities? In which sectors are they serving?

(Conservation, Livelihood, Education, Health, Micro Finance, Other activities)

11. How do the people response to these activities and efforts? What is the satisfaction level of beneficiaries? What do they expect in further?

12. Women and Youth Inclusion:

Name of Value Chain	**Women Inclusion (High/Med/Low)**	**Youth Inclusion: (High/Med/Low)**	**Pop. Size involved (Outreach)**

Phase 2 Questionnaires

Questionnaire for Vegetable and Medicinal Plant Producer – South East Region
Value Chain Analysis for CREL Project

Respondent's Name		
Phone Number		
Date		
Project Site (tick):	1. Dudhpukuria 2. Dhopachhori 3. Chunati	4. Jaldi 5. Kaptai 6. Karnafuli
Status (Tick Relevant)	Commercial	Current
Farmer's Land Size **(dcm)**	**Own:**	**Leased:**

1. Cost Benefit for Vegetable:

Name of the crop	Land Size (dcm)	Total Production Cost (BDT)	Volume Produced (Kg)	Volume Sold (Kg)	Total Revenue

1.1 What are the problems in Vegetable production?

Name of the crop	Problem detail

1.2 Are you satisfied with quality of your product?

A) Yes B) No

1.3 If No, how can you improve the quality of product?

2. Training / Skill Development

2.1 Have you ever got training on your vegetable production?

A) Yes B) No

2.2 If Yes, Where did you get the training?

A) Government Institution
B) NGO
C) Private Company
D) VCF/CMC members

2.3 If NO, Do you require any training on skill development for vegetable cultivation?

A) Yes
B) No

3. Access to Finance

3.1 Have you ever got financial assistance for vegetable production?

A) Yes B) No

3.2 If Yes, What was the source of finance?

Govt. banks	Private Banks	Project/NGOs
Microfinance Institutions	Community fund	Dadon/Mohajon

Others:

3.3 If No, Do you require any financial assistance development for vegetable production?

A) Yes B) No

4. Market Behaviour

4.1 To whom do you sell your products (in percentage)?

Name of Crop:	Foria	Aarotdar	Small Retailer	Consumer	Total
					100%
					100%
					100%
					100%
					100%
					100%

Questionnaire for Fruit Farmer/Producer – South East Region
Value Chain Analysis for CREL Project

Respondent's Name		
Father's / Husband's Name		
Phone Number		
Date		
Status	Beneficiary	Non-Beneficiary
Farmer's Pond Size		

1. Farmer's Production Status and Capacity:

1.1 Are you producing fruits in homestead areas or in cultivable land?

A) Home stead areas (Approximate size…………..).

B) Cultivable land. (Approximate size…………) .

1.2 Types of fruits and production status related information.

Fruits	Volume	Input Cost	Hour/Day (Required)	Profit	Comments

2. Access to Input Related Product and Services:

2.1 Types of inputs used in fruit cultivation.

Tyeps of inputs	Inputs	Volume	Hour/Day (Required)	Cost
Papaya				
Guava				
Banana				
Pineapple				

2.2 Do you get any training on fruit cultivation?

A) Yes. (Source…………….)

B) No.

2.3 Where do you get fruit cultivation related information?
A) B)

3. Marketing of fruits:

3.1 Where do you sell your fruits?

Fruits	Market Local/ Regional/ Individual	Volume	Price	Comment

3.2 What are the constrains in marketing of fruits?

3.3 Are you satisfied with quality of your fruits?
B) Yes B) No
C)
3.4 If No, how can you improve the quality of product?

4. Access to Finance

4.1 Have you ever got financial assistance for fruit cultivation?
B) Yes B) No

4.2 If Yes, What was the source of finance?
A) B) C)

Questionnaire for Handicraft / Handloom Producer – South East Region
Value Chain Analysis for CREL Project

Respondent's Name	
Father's / Husband's	

Name		
Phone Number		
Date		
Status	Beneficiary	Non-Beneficiary
Farmer's Pond Size		

1. **Input Supply Status**

a. Name of the products and required inputs for handicrafts/handloom.

Products	Inputs	Volume	Hour/Day (Required)	Cost
Other				

2. **Market Access Status**

a. Where do you sell your products

Products	Market Local/ Regional	Volume	Price	Comment
Other				

b. What are the constrains in marketing of handicraft / handloom products?

c. Do you sell your product to any Faria/ Paiker?
A) Yes B) No

d. If Yes, Please provide Name, Contact No. and offered price by Faria/ Paiker?

Products	Market Local/ Regional	Volume	Price	

Other				

e. Are you satisfied with quality of your product?
   D) Yes B) No
f. If No, how can you improve the quality of product?

3. Training / Skill Development

a. Have you ever got training on your Handicraft / handloom production?
   B) Yes B) No
b. If Yes, Where did you get the training?
   E)
   F)
   G)
c. If NO, Do you require any training on skill development for handicraft / handloom?
   C) Yes
   D) No

4. Access to Finance

a. Have you ever got financial assistance for Handicraft / handloom production?
   C) Yes B) No

b. If Yes, What was the source of finance?
   B) B) C)

c. If No, Do you require any financial assistance development for handicraft / handloom?
   B) Yes B) No

Questionnaire for Resource Extractor – South East Region
Value Chain Analysis for CREL Project

Respondent's Name		
Phone Number		
Date		
Project Site (tick):	1. Dudhpukuriya 2. Dhopachhori 3. Chunati	4. Jaldi 5. Kaptai 6. Karnafuli
Status (Tick Relevant)		
Land Size **(dcm)**	**Own:**	**Leased:**

1. Natural Resources Extracted (Personal use):

Name of Resource	Amount extracted (kg/month)	Value (Tk./month)
Firewood		
Fish		
Grass		

2. Natural Resources Extracted (Commercial use):

Name of Resource	Amount extracted (kg/month)	Monthly Income (Tk.)
Firewood		
Fish		
Grass		
Aquatic Plants		
Timber		

3. Other Experiences and skills:

Experience? (Tick)	Type of Experience (Tick)
Vegetable	Sowing, Farming, weeding, harvesting, cleaning, carrying
Forash	
Brinjal	
Handicraft	

Semi Structured Question Guide for Agricultural Input Sellers

INPUT SELLERS	
Required Information	**Output**
Actor Type	
Personal Details	
Product Range	
What products do you keep in your store?	➢
What price range are they in?	
Customer Base	
How many customers do you have? Regular an infrequent division?	➢
What are the problems you face in dealing with customers?	➢
Linkage Strengths and Weaknesses	
Do your customers misuse products due to lack of knowledge? Details.	➢
Which are the most important factors to your customer in purchasing decision?	➢
Are there any bulk buyers from your shop? Do they get discounts?	➢
Are you informed about the correct usage of inputs? Do you inform your customers?	➢
Market Consistency	
Which products have ready supply always and which do not?	
How much does price of core inputs like seed, fertilizer and pesticide vary throughout the year?	
Business Behavior	
What is your transaction model with customers?	
How many pay upfront? How many get credit? Why them?	
Can customers bargain on price? What are the reasons when you bargain on price?	

Inter-relationship	
Do you cooperate and collude with input sellers?	
On which factors do you cooperate?	➢
Other Remarks	

Semi Structured Question Guide for Agricultural Input Sellers

Market Intermediaries and Retailers	
Required Information	**Output**
Actor Type	
Personal Details	
1. Product Range	
What products do you sell?	
In chosen value chains, what is the monthly volume and value sold of products sourced from project sites?	
2. Customer Base	
How many customers do you have? Regular an infrequent division?	
What % from the local area? Within district? Within division? Outside division?	
What are the main concerns of your customers?	
3. Linkage Strengths and Weaknesses	
Do your customers have a problem with the chosen product? Why do they think so?	
Which are the most important factors to your customers in purchasing decisions?	
Are there any bulk sellers in your shop? Do they get advantage?	
What % of your source are small farmers? Forias, and paikers/patilwala? Large farmers? Collective farmers?	
4. Market Consistency	
Which products have ready supply always and which do not?	
How much does price of core inputs like seed, fertilizer and pesticide vary throughout the year?	
5. Business Behavior	
What is your transaction model with	

farmers?	
How many get paid upfront? How many on credits?	
Can farmers bargain on price? What are the factors on which the bargain is set?	
6. Inter-relationship	
Do you cooperate and collude with other market actors of your kind?	
On which factors do you cooperate?	

Annex 4: Respondent list

Table 34: Respondent List for Southeast Region 1 (Phase 1)

Sl.	Name	Mobile	Adress	Site	District	Region	Occupation	Actor	Tools that used in data collection	Phase of the study	Interviewer
1	Shohidul Islam	01718-732921		Bashkhali	Chittagong	Southeast Region -1	Agricultural Extension Officer	Support Service	Indepth Interview	Phase 1	Consultants
2	Md. Jahangir Alam	01196-099459		Lohagara	Chittagong	Southeast Region -1	Agricultural Extension Officer	Support Service	Indepth Interview	Phase 1	Consultants
3	Kazi Rafiquzzaman	01716-290288		Lohagara	Chittagong	Southeast Region -1	Dairy and Livestock Officer	Support Service	Indepth Interview	Phase 1	Consultants
4	Tanveerul Islam	01712-717808		Lohagara	Chittagong	Southeast Region -1	Jubo Unnoyon Officer	Support Service	Indepth Interview	Phase 1	Consultants
5	Md. Abu Taher	01820-971714		Bashkhali	Chittagong	Southeast Region -1	Abdur Jobber Enterprise, input seller	Support Service	Indepth Interview	Phase 1	Consultants
6	Shiraj Kobir	01811-810614		Bashkhali	Chittagong	Southeast Region -1	Faria, Vegetable	Foria	Indepth Interview	Phase 1	Consultants
7	Md. Abdul Malek	01811-810615		Bashkhali	Chittagong	Southeast Region -1	Faria, Vegetable	Foria	Indepth Interview	Phase 1	Consultants
8	Abdul Gaffar	01815-545830		Lohagara	Chittagong	Southeast Region -1	Arotder, Vegetable	Aarotdar	Indepth Interview	Phase 1	Consultants
9	Afsar Talukder	01815-550503		Rangunia	Chittagong	Southeast Region -1	Fish Farmers	Producer	Indepth Interview	Phase 1	Consultants
10	Md. Nur Hossain	01815-378728		Bashkhali	Chittagong	Southeast Region -1	CMC Vice president/ Upazila Chairman	Support Service	Indepth Interview	Phase 1	Consultants
11	Sumon Das	01839-437075		Bashkhali	Chittagong	Southeast Region -1	Field Facilitator, SHED (NGO)	Support Service	Indepth Interview	Phase 1	Consultants
12	Mamunur Rashid	01716-278366		Bashkhali	Chittagong	Southeast Region -1	Jubo Unnoyon Officer	Support Service	Indepth Interview	Phase 1	Consultants
13	Mohammed	01817-400189		Chandanaish	Chittagong	Southeast	Paikar, Lemon	Foria	Indepth Intervie	Phase 1	Consu

	Mujaffar Ahmed					Region -1	and Bamboo		w		ltants
14	Md. Aktaruzzaman	01731-589677		Chandanaish	Chittagong	Southeast Region -1	Agricultural Extension Officer	Support Service	Indepth Interview	Phase 1	Consultants
15	Md. Rafiqul Islam	01722-239036		Chandanaish	Chittagong	Southeast Region -1	Upazila Fisheries Officer	Support Service	Indepth Interview	Phase 1	Consultants
16	Anisur Rahman	01711-573843		Chandanaish	Chittagong	Southeast Region -1	Upazila Dairy and Livestock Officer	Support Service	Indepth Interview	Phase 1	Consultants
17	Aziz Ahmed	01818-922792		Chandanaish	Chittagong	Southeast Region -1	Vetenary Field Assistance	Support Service	Indepth Interview	Phase 1	Consultants
18	Md. Abu Bakar Siddique	01834-515391		Kaptai & Karnafuli	Rangamati	Southeast Region -1	Upazila Fisheries Officer	Support Service	Indepth Interview	Phase 1	Consultants
19	Sheikh Helal Uddin	01814-966379		Kaptai & Karnafuli	Rangamati	Southeast Region -1	Upazila Jubo Unnoyon Officer	Support Service	Indepth Interview	Phase 1	Consultants
20	Md. Kamruzzaman	01736-161343		Kaptai & Karnafuli	Rangamati	Southeast Region -1	Agricultural Extension Officer	Support Service	Indepth Interview	Phase 1	Consultants
21	Md. Joynal Abedin	01826-357943		Kaptai & Karnafuli	Rangamati	Southeast Region -1	Retailer, Vegetable and Fruits	Retailer	Indepth Interview	Phase 1	Consultants
22	Mohammed Kobir	01825-692885	Rangunia	Dudhpukuria	Chittagong	Southeast Region -1	Fish Farmer, Dudpukuria	Producer	Indepth Interview	Phase 1	Consultants
23	Bablu marma	01554725957	Chitmorom Hedmanpara	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Day Labourar	Beneficiary	Survey questionnaire	Phase 1	Consultant
24	Adaima Marma	01839435469	Chitmorom Hedmanpara	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Housewife	N/A	Survey questionnaire	Phase 1	Consultant
25	Suikauo marma	01839124276	Chitmorom Hedmanpara	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Housewife	N/A	Survey questionnaire	Phase 1	Consultant
26	Chaingnu Mong marma	01829391900	Chitmorom Hedmanpara	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Day Labourar	Beneficiary	Survey questionnaire	Phase 1	Consultant
27	Angana Marma	01839435469	Chitmorom Hedmanpara	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Housewife	N/A	Survey questionnaire	Phase 1	Consultant
28	Waynungchi	01825028265	Chitmorom Hedmanpara	Kaptai &	Rangamati	Southeast	Housewife	N/A	Survey questio	Phase 1	Consu

	Marma			Karnafuli		Region -1			nnaire		Consultant
29	Selina Akter	01813322893	Chitmorom Hedmanpara	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Housewife	N/A	Survey questionnaire	Phase 1	Consultant
30	Mongtong Marma	01825028265	Chitmorom Hedmanpara	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Day Labourar	Beneficiary	Survey questionnaire	Phase 1	Consultant
31	Mongnu Marma	01814801645	Chitmorom Hedmanpara	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Day Labourar	Beneficiary	Survey questionnaire	Phase 1	Consultant
32	Amena	01815018163	Chitmorom Muslimpara	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Housewife	N/A	Survey questionnaire	Phase 1	Consultant
33	Mamaching Marma	01825028264	Chitmorom Muslimpara	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Housewife	N/A	Survey questionnaire	Phase 1	Consultant
34	Esmail Hosen	01822513001	Chitmorom Muslimpara	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Boatman	Beneficiary	Survey questionnaire	Phase 1	Consultant
35	Momtaz Begum	01813322893	Chitmorom Muslimpara	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Housewife	N/A	Survey questionnaire	Phase 1	Consultant
36	Momtaz Begum	01828813559	Chitmorom Muslimpara	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Housewife	N/A	Survey questionnaire	Phase 1	Consultant
37	Rokeya Begum	01826586451	Chitmorom ,Muslimpara	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Job	N/A	Survey questionnaire	Phase 1	Consultant
38	Md.Abdullah	01849521874	Chitmorom ,Muslimpara	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Farmer	Producer	Survey questionnaire	Phase 1	Consultant
39	Amena Begum	01826535650	Chitmorom Muslimpara	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Housewife	N/A	Survey questionnaire	Phase 1	Consultant
40	Luxmirani Das	01556499015	Chitmorom Muslimpara	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Housewife	N/A	Survey questionnaire	Phase 1	Consultant
41	Md.Abdullah	01823465683	Chitmaram Union Office	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Corn Farmer	Producer	FGD	Phase 1	Consultant
42	Suijuong Marma	01835496875	Chitmaram Union Office	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Farmer	Producer	FGD	Phase 1	Consultant
43	Jingholabu Marma	01837241844	Chitmaram Union Office	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Zoom Farmer	Producer	FGD	Phase 1	Consultant

44	Ayesha Begum	01819866061	Chitmaram Union Office	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Housewife	N/A	FGD	Phase 1	Consultant
45	Momtaz Begum	01813322893	Chitmaram Union Office	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Nursery	Input Supply	FGD	Phase 1	Consultant
46	Rokeya Begum	01826586451	Chitmaram Union Office	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Poultry	Producer	FGD	Phase 1	Consultant
47	Paithui Marma	01554725957	Chitmaram Union Office	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Tanti	Producer	FGD	Phase 1	Consultant
48	Babli Marma	01557132796	Chitmaram Union Office	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Tanti	Producer	FGD	Phase 1	Consultant
49	Oyenuching Marma	01815022655	Chitmaram Union Office	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Farmer	Producer	FGD	Phase 1	Consultant
50	Hasina Begum	01823465683	Chitmaram Union Office	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Farmer	Producer	FGD	Phase 1	Consultant
51	Angana Marma	01839435649	Chitmaram Union Office	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Poultry	Producer	FGD	Phase 1	Consultant
52	Minupro Marma	01822273195	Vill:Balabopara,PS: kaptai,Dist: Rangamati	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Housewife	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
53	Roji Marma	01811916342	Vill:Balabopara,PS: kaptai,Dist: Rangamati	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Housewife	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
54	Akter Begum	01822273195	Vill:Balabopara,PS: kaptai,Dist: Rangamati	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Housewife	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
55	Jibonara	01840863259	Vill:Balabopara,PS: kaptai,Dist: Rangamati	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Habdricraf	Producer	Beneficiary Profiling Checklist	Phase 1	Consultant
56	Ranu Shil	Re:01822273195	Vill:Balabopara,PS: kaptai,Dist: Rangamati	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Housewife	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant

57	Chiroton Jolodas	01818086432	Vill:Balochar. Ps:Kaptai,Dist:Rangamati	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Capture Fish	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
58	Shuvash Das	01831867270	Vill:Balochar. Ps:Kaptai,Dist:Rangamati	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Fish Buseness	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
59	MD Rowshan Ali	01835319889	Vill:Balochar. Ps:Kaptai,Dist:Rangamati	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Jum Cultivation	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
60	MD Daulot khan	Re01835319889	Vill:Balochar. Ps:Kaptai,Dist:Rangamati	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Capture Fish	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
61	Norul amin Bhuya	01818086432	Vill:Balochar. Ps:Kaptai,Dist:Rangamati	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Capture Fish	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
62	Gulbanu	01851393870	Vill: Morgitila,PS: Kaptai,Dist:Rangamati	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Housewife	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
63	Akter Begum	01828372295	Vill:Morgitila, PS:kaptai,Dist:Rangamati	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Habdricraf	Producer	Beneficiary Profiling Checklist	Phase 1	Consultant
64	Bibi Kulsum	01738287100	Vill:Morgitila, PS:kaptai,Dist:Rangamati	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Swing	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
65	Jelly Begum	01833427533	Vill:Morgitila, PS:kaptai,Dist:Rangamati	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Housewife	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
66	Kusnara Begum	01851938655	Vill:Morgitila, PS:kaptai,Dist:Rangamati	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Housewife	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
67	Josna begum	01831408729	Vill:Morgitila, PS:kaptai,Dis	Kaptai &	Rangamati	Southeast	Housewife	Beneficiary	Beneficiary	Phase 1	Consu

			t:Rangamati	Karnaf uli		Region -1			Profilin g Checklis t		lta nt
6 8	Kamrun nahar	0182239 5286	Vill:Morgitila, PS:kaptai,Dis t:Rangamati	Kaptai & Karnaf uli	Ranga mati	Southe ast Region -1	Swing,Han dricraf	Benefi ciary	Benefici ary Profilin g Checklis t	Phase 1	Co nsu lta nt
6 9	Fatema Begum	0155367 9153	Vill:Morgitila, PS:kaptai,Dis t:Rangamati	Kaptai & Karnaf uli	Ranga mati	Southe ast Region -1	Housewife ,Small beseness	Benefi ciary	Benefici ary Profilin g Checklis t	Phase 1	Co nsu lta nt
7 0	lovely	0182521 1178	Vill:Morgitila, PS:kaptai,Dis t:Rangamati	Kaptai & Karnaf uli	Ranga mati	Southe ast Region -1	Swing	Benefi ciary	Benefici ary Profilin g Checklis t	Phase 1	Co nsu lta nt
7 1	Thoaich ing mong Marma	Re;0155 3129482	Vill;Bangchar i Marmapara, PS:Kaptai,dis t: Rangamati	Kaptai & Karnaf uli	Ranga mati	Southe ast Region -1	Farmer	Benefi ciary	Benefici ary Profilin g Checklis t	Phase 1	Co nsu lta nt
7 2	Poching Marma	0155312 9482	Vill:Bangchar i Marmapara, PS:Kaptai,dis t: Rangamati	Kaptai & Karnaf uli	Ranga mati	Southe ast Region -1	Farmer	Benefi ciary	Benefici ary Profilin g Checklis t	Phase 1	Co nsu lta nt
7 3	Mongch ing thoai Marma	Re;0155 3129482	Vill:Bangchar i Marmapara, PS:Kaptai,dis t: Rangamati	Kaptai & Karnaf uli	Ranga mati	Southe ast Region -1	Farmer	Benefi ciary	Benefici ary Profilin g Checklis t	Phase 1	Co nsu lta nt
7 4	Uchashi ng Marma	0155741 6456	Vill:Bangchar i Marmapara, PS:Kaptai,dis t: Rangamati	Kaptai & Karnaf uli	Ranga mati	Southe ast Region -1	Farmer	Benefi ciary	Benefici ary Profilin g Checklis t	Phase 1	Co nsu lta nt
7 5	Mongtic hing Marma	Re;0155 3129482	Vill:Bangchar i Marmapara, PS:Kaptai,dis t: Rangamati	Kaptai & Karnaf uli	Ranga mati	Southe ast Region -1	Farmer	Benefi ciary	Benefici ary Profilin g Checklis t	Phase 1	Co nsu lta nt
7 6	Ongkap ro Marma	Re;0155 7312184	Vill:Bangchar i Muslimpara, PS:Kaptai,dis t: Rangamati	Kaptai & Karnaf uli	Ranga mati	Southe ast Region -1	Farmer	Benefi ciary	Benefici ary Profilin g Checklis t	Phase 1	Co nsu lta nt
7 7	Salaha Bagum	0183168 4256	Hasankata,C hunati,Lohag ara	Kaptai & Karnaf uli	Ranga mati	Southe ast Region -1	Agricultur	Benefi ciary	Benefici ary Profilin g	Phase 1	Co nsu lta nt

									Checklist		
78	Sahen Akter	01825410536	Rasidergona, BaraHatia,Lohagara.	Kaptai & Karnafuli	Rangamati	Southeast Region -1	poultry Farm	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
79	Rokeya Bagum	01835319887	Rasidergona, BaraHatia,Lohagara.	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Agricultur	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
80	Manjura Begum	01825026222(req)	Hatkohlamura,Cuhnaty ,Loahgara	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Agricultur	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
81	Maynul Islam	01812601772(req)	Deputypara, Cuhnaty,Lohagara	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Agricultur	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
82	Md Jasim uddin	01830659332	Kalu sikder para,Cuhnaty ,Lohagara	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Cooker	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
83	Momtaz begum	01825026222(req)	Hatkohlamura,Cuhnaty ,Loahgara	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Agricultur	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
84	Md Sahab uddin	01814794351	Hatkohlamura,Cuhnaty ,Loahgara	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Driver	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
85	Md Hossen	01825450145(req)	Hatkohlamura,Cuhnaty ,Loahgara	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Day laber	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
86	Minuara begum	01828437334	Hatkohlamura,Cuhnaty ,Loahgara	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Agricultur	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
87	Eaar Mohammad	01820-403-865	Shamukhchodi, Dhopachori, Condonaish, Ctg	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Farmer	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant

88	Noor Nahar Begum	01835-688-775	Purbo Majher Para, Dhopachori, Condonaish, Ctg	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Day Labor	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
89	Kamal Uddin	01830-977-694	Majher Para, Dhopachori, Condonaish, Ctg.	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Day Labor	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
90	Noor Islam	01840-851-766	Noton Para-Poran Jurani, Dhopachori, Condonaish, Ctg.	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Farmer	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
91	Enamul Haque	01825-158-384	Camp Para, Dhopachori, Condonaish, Ctg.	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Farmer	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
92	Hasina Begum	01822-335-770 (Husband)	Rek Ghata, Dhopachori, Condonaish, Ctg.	Kaptai & Karnafuli	Rangamati	Southeast Region -1	House Wife	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
93	Kohinur Aktar	01851-733-081 (Req)	Sonker Kul, Dhopachori, Condonaish, Ctg.	Kaptai & Karnafuli	Rangamati	Southeast Region -1	House Wife	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
94	Md. Jaker Hossen	01826-542-645	Monglar Mukh, Dhopachori, Condonaish, Ctg.	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Farmer	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
95	Md. Shafiqul Islam	01815-848-404	Shantir Para-Maioni, Dhopachori, Condonaish, Ctg.	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Business	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
96	Momtaz Begum	01829-985-166	Modhur Chora-Chapa Chori, Dhopachori, Condonaish, Ctg.	Kaptai & Karnafuli	Rangamati	Southeast Region -1	House Wife	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
97	Akhter ahmed	01811810787	vill:Napora,upazilla:Banshkhali.Chittagong	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Farmer(vegitable)	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
98	Rahena Begum	01834792739	Vill: Shamsiargho	Kaptai &	Rangamati	Southeast	Housewife & can	Beneficiary	Beneficiary	Phase 1	Consu

			na, Union: Puichari,Upzil: Banshkhali	Karnafuli		Region -1	make Handicrafts		Profiling Checklist		Itant
99	Gul Chera	01846957994	Vill: Shamsiarghona, Union: Puichari,Upzil: Banshkhali	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Housewife & can make Handicrafts	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
100	Md. Alamgirr Hossain	01831193066	Vill: Shamsiarghona, Union: Puichari,Upzil: Banshkhali	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Vegeta ble Cultivation & Business	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
101	Nirjan Dev	01811670008	vill:Napora, Union: Puichari upazilla:Banshkhali	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Farmer	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
102	Rina dev	01821707850	vill:Purva Napora, Union: Puichari upazilla:Banshkhali	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Housewife	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
103	Rahima Begum	01834159827 (on request)	Vill: Dusari para, Union: Jaldi, Upazila: Banshkhali	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Handicraft Production	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
104	Md. Siraj Mia	01854837615	Vill: Dusari para, Union: Jaldi, Upazila: Banshkhali	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Farmer	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
105	Mabia Begum	01831648193	Vill: Dusari para, Union: Jaldi, Upazila: Banshkhali	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Handicraft Production	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
106	Md. Ajgor Hossain	01834159827	Vill: Dusari para, Union: Jaldi, Upazila: Banshkhali	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Farmer & Business	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
107	MD: Rasel	01834661656	Vill:Chowdhuri Chara, Upz: Kaptai,Dist: Rangamati	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Fisherman	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
108	MD: Mahafuz	01823395767	Vill:Chowdhuri Chara, Upz: Kaptai,Dist: Rangamati	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Bussines	Beneficiary	Beneficiary Profiling	Phase 1	Consultant

									Checklist		
109	Miton Das	01853013837	Vill:Chowdhuri Chara, Upz: Kaptai,Dist: Rangamati	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Fisherman	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
110	MD: Bahar	Re.'01840266329	Vill:Chowdhuri Chara, Upz: Kaptai,Dist: Rangamati	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Fisherman	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
111	Hasina Begum	01835279644	Brickfield MuslimPara Upz: Kaptai,Dist: Rangamati	Kaptai & Karnafuli	Rangamati	Southeast Region -1	HouseWife	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
112	MD: Sumon	01814834736	Vill:Chowdhuri Chara, Upz: Kaptai,Dist: Rangamati	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Driving	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
113	MD: Firoz	01839682092	Vill:Chowdhuri Chara, Upz: Kaptai,Dist: Rangamati	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Fisherman	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
114	Rubel kumar das	01813575228	Vill:Chowdhuri Chara, Upz: Kaptai,Dist: Rangamati	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Cow rearing	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
115	Tarun kumar das	01833254614	Vill:Chowdhuri Chara, Upz: Kaptai,Dist: Rangamati	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Fisherman	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
116	Mijan	01840109580	Vill:Chowdhuri Chara, Upz: Kaptai,Dist: Rangamati	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Fisherman	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
117	Badsha Miah	01828716090	Vill:Chowdhuri Chara, Upz: Kaptai,Dist: Rangamati	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Fisherman	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
118	Nur Nahar	01828717108	Vill:Chowdhuri Chara, Upz: Kaptai,Dist: Rangamati	Kaptai & Karnafuli	Rangamati	Southeast Region -1	HouseWife	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant

119	Khokon Das	01832660725	Vill:Chowdhuri Chara, Upz: Kaptai,Dist: Rangamati	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Fisherman	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
120	Shimul Das	01818292493	Vill:Chowdhuri Chara, Upz: Kaptai,Dist: Rangamati	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Fisherman	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
121	Paithuy Marma	01554725957	Vill:Chitmorom Headmanpara Upz: Kaptai, Dist: Rangamati	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Loam	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
122	Babli Marma	01557132796	Vill:Chitmorom Headmanpara Upz: Kaptai, Dist: Rangamati	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Loam	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
123	Suekraw Marma	01839124276	Vill:Chitmorom Headmanpara Upz: Kaptai, Dist: Rangamati	Kaptai & Karnafuli	Rangamati	Southeast Region -1	HouseWife	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
124	Thuima Marma	01825028265	Vill:Chitmorom Headmanpara Upz: Kaptai, Dist: Rangamati	Kaptai & Karnafuli	Rangamati	Southeast Region -1	HouseWife	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
125	Bablu Marma	01554725957 Req	Vill:Chitmorom Headmanpara Upz: Kaptai, Dist: Rangamati	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Day Labour	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
126	Adaima Marma	01839435469 req	Vill:Chitmorom Headmanpara Upz: Kaptai, Dist: Rangamati	Kaptai & Karnafuli	Rangamati	Southeast Region -1	HouseWife	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
127	Chaingnu mong Marma	01829391900	Vill: Chitmorom Baro Para	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Day Labour	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
128	Anjana Marma	01839435469	Vill: Chitmorom Baro Para	Kaptai & Karnafuli	Rangamati	Southeast Region -1	HouseWife	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
12	Woyenungchi	01825028265	Vill: Chitmorom	Kaptai &	Rangamati	Southeast	HouseWife	Beneficiary	Beneficiary	Phase 1	Consu

9	Marma		Baro Para	Karnafuli		Region -1			Profiling Checklist		ltant
130	Selina Akter	01813322893	Vill: Chitmorom Baro Para	Kaptai & Karnafuli	Rangamati	Southeast Region -1	HouseWife	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
131	Mongtong Marma	01825028265	Vill: Chitmorom Baro Para	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Day Labour	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
132	Mongnu Marma	01814806459	Vill: Chitmorom Baro Para	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Day Labour	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
133	Amena(Saira)	01815018163	Vill: Chitmorom Baro Para	Kaptai & Karnafuli	Rangamati	Southeast Region -1	HouseWife	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
134	Masaching Marma	01825028265 req	Vill: Chitmorom Baro Para	Kaptai & Karnafuli	Rangamati	Southeast Region -1	HouseWife	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
135	Momotaz Begum	01813322893	Vill: Chitmorom Baro Para	Kaptai & Karnafuli	Rangamati	Southeast Region -1	HouseWife	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
136	Ismail Hossen	01822513001	Vill: Chitmorom Muslimpara	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Boatman	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
137	Momotaz Begum	01828813559	Vill: Chitmorom Muslimpara	Kaptai & Karnafuli	Rangamati	Southeast Region -1	HouseWife	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
138	Rokeya Begum	01826586451	Vill: Chitmorom Muslimpara	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Service	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
139	Md: Abdullah	01849521874	Vill: Chitmorom Muslimpara	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Farmer	Beneficiary	Beneficiary Profiling	Phase 1	Consultant

									Checklist		
140	Ayesha Begum	01826535650	Vill: Chitmorom Muslimpara	Kaptai & Karnafuli	Rangamati	Southeast Region -1	HouseWife	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
141	Laxmi Rani Das	01556499015	Vill: Chitmorom Muslimpara	Kaptai & Karnafuli	Rangamati	Southeast Region -1	HouseWife	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
142	Profullo Chakma	01851728057	Kibok para	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Farmer	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
143	shafilly day	01823722459	Sukbillas	Kaptai & Karnafuli	Rangamati	Southeast Region -1	House Wife	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
144	Moni bala day	R.01823722459	Sukbillas	Kaptai & Karnafuli	Rangamati	Southeast Region -1	House Wife	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
145	Aunita	R.01823722459	Sukbillas	Kaptai & Karnafuli	Rangamati	Southeast Region -1	House Wife	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
146	Ieasin ali	01822735688	Middle Napith	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Farmer	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
147	Sunil Barua	01850315890	Folaharia	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Farmer	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
148	Sudansue day	01825996743	Rabindro para	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Farmer	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant
149	Kajol kanti Day	01825996743	Rabindro para	Kaptai & Karnafuli	Rangamati	Southeast Region -1	Tea maker	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant

150	Nakil Barua	01812450077	Folaharia	Kaptai & Karnafuli	Rangamati	Southeast Region-1	Grosarishop	Retailer	Beneficiary Profiling Checklist	Phase 1	Consultant
151	Suimaching	01840158061	Kibok para	Kaptai & Karnafuli	Rangamati	Southeast Region-1	House Wife	Beneficiary	Beneficiary Profiling Checklist	Phase 1	Consultant

Table 35: Respondent List for Southeast Region 1 (Phase 2)

Sl.	Name	Mobile	Adress	Site	District	Region	Occupation	Actor	Tools that used in data collection	Phase of the study
152	Fayjullah	01823459374	Chandanaish	Dhopachari	Chittagong	South east Region-1	Vegetables Cultivation	Producer	Questionnaire Survey	Phase 2
153	Md.Abdullah	01845400412	Rangunia	Dhopachari	Chittagong	South east Region-1	Vegetables Cultivation	Producer	Questionnaire Survey	Phase 2
154	Md. Emanul	01825158384	Chandanaish	Dhopachari	Chittagong	South east Region-1	Vegetables Cultivation	Producer	Questionnaire Survey	Phase 2
155	Md. Nurul Amin	01818086432	Rangunia	Dudhpukuria	Chittagong	South east Region-1	Vegetables Cultivation	Producer	Questionnaire Survey	Phase 2
156	Nikhil de	01843974031	Rangunia	Dudhpukuria	Chittagong	South east Region-1	Vegetables Cultivation	Producer	Questionnaire Survey	Phase 2
157	Md Farid	01824770125	Rangunia	Dudhpukuria	Chittagong	South east Region-1	Vegetables Cultivation	Producer	Questionnaire Survey	Phase 2
158	Nikel borroura	01812450077		Chunati	Chittagong	South east Region-1	Vegetables Cultivation	Producer	Questionnaire Survey	Phase 2
159	Anwar	01823921403		Chunati	Chittagong	South east Region-1	Vegetables Cultivation	Producer	Questionnaire Survey	Phase 2
160	Abdul Aalim	01821751330		Chunati	Chittagong	South east Region-1	Vegetables Cultivation	Producer	Questionnaire Survey	Phase 2
161	Md,Kamal Uddin	01830478650	Banshkhali	Jaldi	Chittagong	South east Region-1	Vegetables Cultivation	Producer	Questionnaire Survey	Phase 2
162	Nurul Haq	01812553388	Banshkhali	Jaldi	Chittagong	South east Region-1	Vegetables Cultivation	Producer	Questionnaire Survey	Phase 2
163	Samsul Islam	01811611182	Banshkhali	Jaldi	Chittagong	South east Region-1	Vegetables Cultivation	Producer	Questionnaire Survey	Phase 2
164	Angsinu Marma	01822273195		Kaptai & Karnafuli	Chittagong	South east Region-1	Vegetables Cultivation	Producer	Questionnaire Survey	Phase 2
16	Joynti	01823824		Kaptai &	Chittagon	South east	Vegetables Cultivation	Producer	Questionnaire	Phase 2

5		834		Karnafuli	g	Region-1			Survey	
166	Mohonde	01839556336		Kaptai & Karnafuli	Chittagong	Southeast Region-1	Vegetables Cultivation	Producer	Questionnaire Survey	Phase 2
167	Santosh Das	01836926008		Dhopachari	Chittagong	Southeast Region-1	Resource Extractor	N/A	Questionnaire Survey	Phase 2
168	Anuma Marma	01822248143		Dhopachari	Chittagong	Southeast Region-1	Resource Extractor	N/A	Questionnaire Survey	Phase 2
169	Mohammad Eusuf	01826526839		Dhopachari	Chittagong	Southeast Region-1	Resource Extractor	N/A	Questionnaire Survey	Phase 2
170	Md.Noor Uddin	01814206741	Rangunia	Dudhpukuria	Chittagong	Southeast Region-1	Resource Extractor	N/A	Questionnaire Survey	Phase 2
171	Ubai Marma	01855248143	Rangunia	Dudhpukuria	Chittagong	Southeast Region-1	Resource Extractor	N/A	Questionnaire Survey	Phase 2
172	Md.Aminul Islam	01835315927	Rangunia	Dudhpukuria	Chittagong	Southeast Region-1	Resource Extractor	N/A	Questionnaire Survey	Phase 2
173	Abul Kalam	01816220086		Chunati	Chittagong	Southeast Region-1	Resource Extractor	N/A	Questionnaire Survey	Phase 2
174	Rup Bahan			Chunati	Chittagong	Southeast Region-1	Resource Extractor	N/A	Questionnaire Survey	Phase 2
175	Razia Begum			Chunati	Chittagong	Southeast Region-1	Resource Extractor	N/A	Questionnaire Survey	Phase 2
176	Shahanu Begum	01834522149	Banshkhali	Jaldi	Chittagong	Southeast Region-1	Resource Extractor	N/A	Questionnaire Survey	Phase 2
177	Ahmed Hossain		Banshkhali	Jaldi	Chittagong	Southeast Region-1	Resource Extractor	N/A	Questionnaire Survey	Phase 2
178	Ali Akbar		Banshkhali	Jaldi	Chittagong	Southeast Region-1	Resource Extractor	N/A	Questionnaire Survey	Phase 2
179	Md.Manik	01829749012		Kaptai & Karnafuli	Chittagong	Southeast Region-1	Resource Extractor	N/A	Questionnaire Survey	Phase 2
180	Md.Jakir Hosen	01845226841		Kaptai & Karnafuli	Chittagong	Southeast Region-1	Resource Extractor	N/A	Questionnaire Survey	Phase 2

181	Akbor Uddin	01834254189		Kaptai & Karnafuli	Chittagong	South east Region-1	Resource Extractor	N/A	Questionnaire Survey	Phase 2
182	Subash Joldash	01831867270		Dhopachari	Chittagong	South east Region-1	Resource Extractor	N/A	Questionnaire Survey	Phase 2
183	Md.Taiob Ali	01829488304		Dhopachari	Chittagong	South east Region-1	Resource Extractor	N/A	Questionnaire Survey	Phase 2
184	Shah Alam	01851377785	Rangunia	Dudhpukuria	Chittagong	South east Region-1	Resource Extractor	N/A	Questionnaire Survey	Phase 2
185	Amal Kanti De	01843974031		Chunati	Chittagong	South east Region-1	Resource Extractor	N/A	Questionnaire Survey	Phase 2
186	Nurul Alam	01835056464		Chunati	Chittagong	South east Region-1	Resource Extractor	N/A	Questionnaire Survey	Phase 2
187	Sujth	01829291647	Banshkhali	Jaldi	Chittagong	South east Region-1	Resource Extractor	N/A	Questionnaire Survey	Phase 2
188	Nurul Hosen	01831526197	Banshkhali	Jaldi	Chittagong	South east Region-1	Resource Extractor	N/A	Questionnaire Survey	Phase 2
189	Salue Barua	01812450077	Banshkhali	Jaldi	Chittagong	South east Region-1	Resource Extractor	N/A	Questionnaire Survey	Phase 2
190	Monsutenchunga	01826991088		Dhopachari	Chittagong	South east Region-1	Resource Extractor	N/A	Questionnaire Survey	Phase 2
191	Babli Marma	01557132796		Dhopachari	Chittagong	South east Region-1	Handicrafts and Handloom Producer	Producer	Questionnaire Survey	Phase 2
192	Paithui marma	01554725957		Dhopachari	Chittagong	South east Region-1	Handicrafts and Handloom Producer	Producer	Questionnaire Survey	Phase 2
193	Rehena Akter	01834182819		Dhopachari	Chittagong	South east Region-1	Handicrafts and Handloom Producer	Producer	Questionnaire Survey	Phase 2
194	Lucky Akter	01829469443	Rangunia	Dudhpukuria	Chittagong	South east Region-1	Handicrafts and Handloom Producer	Producer	Questionnaire Survey	Phase 2
195	Sajeda akter	01823512873	Rangunia	Dudhpukuria	Chittagong	South east Region-1	Handicrafts and Handloom Producer	Producer	Questionnaire Survey	Phase 2
19	Erabati Tripura	01843288	Rangunia	Dudhpukuria	Chittagon	South east	Handicrafts and Handloom	Producer	Questionnaire	Phase 2

6		260			g	Region-1	Producer		Survey	
197	Pakera begum	01832441224		Chunati	Chittagong	Southeast Region-1	Handicrafts and Handloom Producer	Producer	Questionnaire Survey	Phase 2
198	Amirunnesa	01820060786		Chunati	Chittagong	Southeast Region-1	Handicrafts and Handloom Producer	Producer	Questionnaire Survey	Phase 2
199	Baby Akter	01824459257		Chunati	Chittagong	Southeast Region-1	Handicrafts and Handloom Producer	Producer	Questionnaire Survey	Phase 2
200	Baitt Tanchunga	01826990108	Banshkhali	Jaldi	Chittagong	Southeast Region-1	Handicrafts and Handloom Producer	Producer	Questionnaire Survey	Phase 2
201	Nur Nahar Begum	01834725833	Banshkhali	Jaldi	Chittagong	Southeast Region-1	Handicrafts and Handloom Producer	Producer	Questionnaire Survey	Phase 2
202	Jeely Begum	01822200443	Banshkhali	Jaldi	Chittagong	Southeast Region-1	Handicrafts and Handloom Producer	Producer	Questionnaire Survey	Phase 2
203	Yasia Begum	01830515094		Kaptai & Karnafuli	Chittagong	Southeast Region-1	Handicrafts and Handloom Producer	Producer	Questionnaire Survey	Phase 2
204	Mostafa Khatun	01818980865		Kaptai & Karnafuli	Chittagong	Southeast Region-1	Handicrafts and Handloom Producer	Producer	Questionnaire Survey	Phase 2
205	Sima Cheniy			Kaptai & Karnafuli	Chittagong	Southeast Region-1	Handicrafts and Handloom Producer	Producer	Questionnaire Survey	Phase 2
206	Md. Immam Hossain	01817789906		Dhopachari	Chittagong	Southeast Region-1	Fruits Producer	Producer	Questionnaire Survey	Phase 2
207	Gorounggo tanchounga	0182042584		Dhopachari	Chittagong	Southeast Region-1	Fruits Producer	Producer	Questionnaire Survey	Phase 2
208	Abdul Kalam Kalu	01825865940		Dhopachari	Chittagong	Southeast Region-1	Fruits Producer	Producer	Questionnaire Survey	Phase 2
209	Mongsha Ching Marma	01856605106	Rangunia	Dudhpukuria	Chittagong	Southeast Region-1	Fruits Producer	Producer	Questionnaire Survey	Phase 2
210	Priotosh Borua	01717019875	Rangunia	Dudhpukuria	Chittagong	Southeast Region-1	Fruits Producer	Producer	Questionnaire Survey	Phase 2
211	Boton Mia	01835064766	Rangunia	Dudhpukuria	Chittagong	Southeast Region-1	Fruits Producer	Producer	Questionnaire Survey	Phase 2

212	Josim Udddin	01831528322		Chunati	Chittagong	Southeast Region-1	Fruits Producer	Producer	Questionnaire Survey	Phase 2
213	Khiluaang marma	01822671383		Chunati	Chittagong	Southeast Region-1	Fruits Producer	Producer	Questionnaire Survey	Phase 2
214	Md.Jahangir Alam	01828897336		Chunati	Chittagong	Southeast Region-1	Fruits Producer	Producer	Questionnaire Survey	Phase 2
215	Ram Posud De	01824065007		Jaldi	Chittagong	Southeast Region-1	Fruits Producer	Producer	Questionnaire Survey	Phase 2
216	Md.Shahidul Islam	01815848404		Jaldi	Chittagong	Southeast Region-1	Fruits Producer	Producer	Questionnaire Survey	Phase 2
217	Md.Kamal	01827274800		Jaldi	Chittagong	Southeast Region-1	Fruits Producer	Producer	Questionnaire Survey	Phase 2
218	Moaiang marma	01819616045		Kaptai & Karnafuli	Chittagong	Southeast Region-1	Fruits Producer	Producer	Questionnaire Survey	Phase 2
219	Md.Didarul Islam	01815500686		Kaptai & Karnafuli	Chittagong	Southeast Region-1	Fruits Producer	Producer	Questionnaire Survey	Phase 2
220	Md.Anwar Kamal	01819829227		Kaptai & Karnafuli	Chittagong	Southeast Region-1	Fruits Producer	Producer	Questionnaire Survey	Phase 2
221	Sujan Kanti Deb	01932313580	Banshkhali	Jaldi	Chittagong	Southeast Region-1	Agriculture (veg)	Producer	Survey questionnaire	Phase 2
222	Paban Chandra Dutta	01824649473	Chandanaish	Dhopachari	Chittagong	Southeast Region-1	Agriculture (veg)	Producer	Survey questionnaire	Phase 2
223	Md. Abdul Malek	01837478477	Rangunia	Dudhpukuria	Chittagong	Southeast Region-1	Handicrafts (bamboo)	Producer	Survey questionnaire	Phase 2
224	Abdur Rahman	01829061787	Chandanaish	Dhopachari	Chittagong	Southeast Region-1	Agriculture (fruit)	Producer	Survey questionnaire	Phase 2
225	Abdur Shukkur	01829985166	Chandanaish	Dhopachari	Chittagong	Southeast Region-1	Extractor (wood/bambo o)	Producer	Survey questionnaire	Phase 2
226	Upchi Mo	01834745386	Rangunia	Dudhpukuria	Chittagong	Southeast Region-1	Agriculture (fruit)	Producer	Survey questionnaire	Phase 2
22	Md Abu Taher	01820171	Banshkhali	Jaldi	Chittagon	South east	Input Wholesaler	Input Seller	In-depth intervie	Phase 2

7		714			g	Region-1	(Veg seed, ferti, agro-chem)		w	
228	Nejam Uddin	01820224723	Banshkhali	Jaldi	Chittagong	South east Region-1	Vegetable Bepari/ Faria	Foria	In-depth interview	Phase 2
229	Ershad Ali	01831894911	Banshkhali	Jaldi	Chittagong	South east Region-1	CPG Chairman	Support Service	In-depth interview	Phase 2
230	Md. Awal Hossain	01839579780	Bangalhalia	Chunati	Rangamati	South east Region-1	Input Seller (fruit nursery)	Input Seller	In-depth interview	Phase 2
231	Dr. A S M Harunor Rashid	01711398674	Raikhali, Chandraghona	Kaptai & Karnafuli	Rangamati	South east Region-1	Principal Scientific Officer, BARI	Support Service	In-depth interview	Phase 2
232	Md. Arifur Rahman	01815472542	38, Chittagong Shopping Complex, Sholoshahar	Sadar	Chittagong	South east Region-1	Proprietor, 'Tantuz Rangamati'	Foria	In-depth interview	Phase 2
233	Mohammad Fazal Karim	01819390319	108, Station Road, Reazuddin Bazar	Sadar	Chittagong	South east Region-1	Joint Secretary, Chittagong Fruit Merchant Association	Support Service	In-depth interview	Phase 2
234	Md. Milon	01556498966	Sadar	Sadar	Bandarban	South east Region-1	Handicraft (loom textile) Entrepreneur	Producer	In-depth interview	Phase 2
235	Ahmed Hossain	01822880119	Chandanaish	Dhopachari	Chittagong	South east Region-1	Input Retailer (Veg seed, ferti, agro-chem)	Input Seller	In-depth interview	Phase 2
236	Mahbubur Rahman	01834544277	Chandanaish	Dhopachari	Chittagong	South east Region-1	Fruit Bepari/ Faria	Foria	In-depth interview	Phase 2
237	Md.Rasel	01834661656	vill:Chowdhury Chora Nicher Bazar	Kaptai & Karnafuli	Rangamati	South east Region-1	Fishing	Producer	Survey questionnaire	Phase 2
238	Shefali De	01823722459	Sukhbilash,Padua	Ranguniа	Chittagang	South east Region-1	Housewife	N/A	Survey questionnaire	Phase 2
239	Mani Bala De		Sukhbilash,Shikdarpara,Padua	Rangunia	Chittagang	South east Region-1	Housewife	N/A	Survey questionnaire	Phase 2
240	Anita Rani	01823722459	Sukhbilash,Padua	Rangunia	Chittagang	South east Region-1	Housewife	N/A	Survey questionnaire	Phase 2
241	Md.Yasin Ali	01822735688	Napitpukuria,Padua	Rangunia	Chittagang	South east Region-1	Farmer	Producer	Survey questionnaire	Phase 2
24	Sunil Barua	01850315	FalHaria,Padua	Rangunia	Chittagan	South east	Farmer	Producer	Survey question	Phase 2

2		890			g	Region-1			naire	
243	Sudangsu De	01825996743	Napitpukuria,Padua	Rangunia	Chittagang	South east Region-1	Farmer	Producer	Survey questionnaire	Phase 2
244	Kajil Kanti De	01825996743	Napitpukuria,Padua	Rangunia	Chittagang	South east Region-1	Tea worker	Producer	Survey questionnaire	Phase 2
245	Nikhil Barua	01812450077	FalHaria,Padua	Rangunia	Chittagang	South east Region-1	Grocary shop	Retailer	Survey questionnaire	Phase 2
246	Suima Ching	0184015806	Kibukpara,Sohanol	Bandarban	Bandarban	South east Region-1	Rubber garden Worker	Producer	Survey questionnaire	Phase 2
247	Gol Banu	01851393870	Murgitila	Kaptai & Karnafuli	Rangamati	South east Region-1	Housewife	N/A	Survey questionnaire	Phase 2
248	Akter Begum	01828372295	Murgitila	Kaptai & Karnafuli	Rangamati	South east Region-1	Making Tools and sewing	Producer	Survey questionnaire	Phase 2
249	Bibi Kulsum	01738287100	Murgitila	Kaptai & Karnafuli	Rangamati	South east Region-1	Sewing	Producer	Survey questionnaire	Phase 2
250	Jelly Begum	01833427533	Murgitila	Kaptai & Karnafuli	Rangamati	South east Region-1	Housewife	N/A	Survey questionnaire	Phase 2
251	Kushnara Begum	01851938655	Murgitila	Kaptai & Karnafuli	Rangamati	South east Region-1	Housewife	N/A	Survey questionnaire	Phase 2
252	Joshna Begum	01831408729	Murgitila	Kaptai & Karnafuli	Rangamati	South east Region-1	Housewife,Sewing	Producer	Survey questionnaire	Phase 2
253	Kamrun nahar	01822395286	Murgitila	Kaptai & Karnafuli	Rangamati	South east Region-1	Sewing,Making Tools	Producer	Survey questionnaire	Phase 2
254	Fatema Begum	01553791653	Murgitila	Kaptai & Karnafuli	Rangamati	South east Region-1	Housewife,Bussiness	Beneficiary	Survey questionnaire	Phase 2
255	Lovely	01825211173	Murgitila	Kaptai & Karnafuli	Rangamati	South east Region-1	Sewing	Producer	Survey questionnaire	Phase 2
256	Joai Ching Marma	01553129482	Bang Chori,Marmapara	Kaptai & Karnafuli	Rangamati	South east Region-1	Farmer	Producer	Survey questionnaire	Phase 2
257	Pushing Mama	01553129482	Bang Chori,Marmapara	Kaptai & Karnafuli	Rangamati	South east Region-1	Farmer	Producer	Survey questionnaire	Phase 2

258	Mong Ching Joai Marma	01553129482	Bang Chori,Marmapara	Kaptai & Karnafuli	Rangamati	South east Region-1	Farmer	Producer	Survey questionnaire	Phase 2
259	Uchdashing Marma	01557416456	Bang Chori,Marmapara	Kaptai & Karnafuli	Rangamati	South east Region-1	Farmer	Producer	Survey questionnaire	Phase 2
260	Mong Toching marma	01553129482	Bang Chori,Marmapara	Kaptai & Karnafuli	Rangamati	South east Region-1	Farmer	Producer	Survey questionnaire	Phase 2
261	Ongka Pru Marma	01557312184	Bang Chori,Marmapara	Kaptai & Karnafuli	Rangamati	South east Region-1	Farmer	Producer	Survey questionnaire	Phase 2
262	Shahin Akter	01825410536	Roshideoghona, Borohatia,Lohapara	Chunati	Chittagong	South east Region-1	Poultry,Farmer	Producer	Survey questionnaire	Phase 2
263	Rokeya Begum		Roshideoghona, Borohatia,Lohapara	Chunati	Chittagong	South east Region-1	Farmer	Producer	Survey questionnaire	Phase 2
264	Manjura Begum	01824026222	Hatkholamura,Chunti,Lohagora	Chunati	Chittagong	South east Region-1	Farmer	Producer	Survey questionnaire	Phase 2
265	Mainul Islam	01812601772	Deputipara,Chunti,Lohagora	Chunati	Chittagong	South east Region-1	Farmer	Producer	Survey questionnaire	Phase 2
266	Md.Joshim Uddin	01830659332	kalusikderpara,Chunti,Lohagora	Chunati	Chittagong	South east Region-1	Cook	N/A	Survey questionnaire	Phase 2
267	Momtaz Begum	01825026222	Hatkholamura,Chunti,Lohagora	Chunati	Chittagong	South east Region-1	Farmer,Paner Boroj	Producer	Survey questionnaire	Phase 2
268	Md.Sohab Uddin	01814794351	Hatkholamura,Chunti,Lohagora	Chunati	Chittagong	South east Region-1	Van Driver	Support Service	Survey questionnaire	Phase 2
269	Md.Hosen	01825450145	Hatkholamura,Chunti,Lohagora	Chunati	Chittagong	South east Region-1	Day Labourar	Beneficiary	Survey questionnaire	Phase 2
270	Minuara Begum	01828437334	Hatkholamura,Chunti,Lohagora	Chunati	Chittagong	South east Region-1	Farmer	Producer	Survey questionnaire	Phase 2
271	Jibon Ara	01840863259	Belafopara	Kaptai & Karnafuli	Rangamati	South east Region-1	Labourar	Producer	Survey questionnaire	Phase 2
272	Rogi Marma	01811916342	Belafopara	Kaptai & Karnafuli	Rangamati	South east Region-1	Housewife	N/A	Survey questionnaire	Phase 2
27	Akter Begum	01822273	Belafopara	Kaptai &	Rangamat	South east	Housewife	N/A	Survey question	Phase 2

3		195		Karnafu li	i	Regio n-1			naire	
2 7 4	Minupr u Marma	0182 2273 195	Belafopara	Kaptai & Karnafu li	Rang amat i	South east Regio n-1	Housewife	N/A	Survey question naire	Phas e 2
2 7 5	Profullo Chakma	0185 1728 057	Kibukpara,Sohan ol	Dhopac hhori	Band arba n	South east Regio n-1	Rubber garden Worker	Producer	Survey question naire	Phas e 2
2 7 6	Saleha Begum	0183 1684 256	Hasankata,Chun ti,Lohagora	Jaldi	Chitt agon g	South east Regio n-1	Farmer	Producer	Survey question naire	Phas e 2
2 7 7	Md.Ajta r Hosen	0183 4159 827	South Joldi,Bashkhali	Jaldi	Chitt agon g	South east Regio n-1	Farmer+bussn ess	Producer	Survey question naire	Phas e 2
2 7 8	Air Moham mad	0182 0403 865	Samukchori,Dho pachori,Chanda nail	Chunati	Loha gora	South east Regio n-1	Farmer	Producer	Survey question naire	Phas e 2
2 7 9	Nur Nahar Begum	0183 5688 775	Majherpara,Dho pachori,Chanda nail	Chunati	Chitt agon g	South east Regio n-1	Housewife	N/A	Survey question naire	Phas e 2
2 8 0	Kamal Uddin	0183 0977 694	Majherpara,Dho pachori,Chanda nail	Chunati	Chitt agon g	South east Regio n-1	Day Labourar	Beneficiary	Survey question naire	Phas e 2
2 8 1	Noor Islam	0184 0851 766	Notunpara,Pora nojurani,Dhopac hori,Chandanail	Chunati	Chitt agon g	South east Regio n-1	Farmer	Producer	Survey question naire	Phas e 2
2 8 2	Enamul Haq	0182 5158 384	Camp para,Dhopachori	Dhopac hhori	Chitt agon g	South east Regio n-1	Farmar	Producer	Survey question naire	Phas e 2
2 8 3	Hasina Begum	0182 2335 770	Rek Ghata,Dhopacho ri	Dhopac hhori	Chitt agon g	South east Regio n-1	Housewife	N/A	Survey question naire	Phas e 2
2 8 4	Kohinur Begum	0185 1733 081	Shonkerkul,Dho pachori	Dhopac hhori	Chitt agon g	South east Regio n-1	Housewife	N/A	Survey question naire	Phas e 2
2 8 5	Md.Jak er Hossen	0182 6542 645	Monglarmukh,D hopachori	Dhopac hhori	Chitt agon g	South east Regio n-1	Farmer	Producer	Survey question naire	Phas e 2
2 8 6	Md.Sha fiqul Islam	0181 5848 404	Shantirpara,Dho pachori	Dhopac hhori	Chitt agon g	South east Regio n-1	Bussiness	Beneficiary	Survey question naire	Phas e 2
2 8 7	Momta z Begum	0182 9985 166	Madhurchora,D hopachori	Dhopac hhori	Chitt agon g	South east Regio n-1	Housewife	N/A	Survey question naire	Phas e 2
2 8 8	Chirton Das	0181 8086 432	Baluchor	Kaptai & Karnafu li	Rang amat i	South east Regio n-1	Fishing	Producer	Survey question naire	Phas e 2

289	Suvash das	01831867270	Baluchor	Kaptai & Karnafuli	Rangamati	South east Region-1	Fishing	Producer	Survey questionnaire	Phase 2
290	Md.Rawshon Ali	01835319889	Baluchor	Kaptai & Karnafuli	Rangamati	South east Region-1	Zoom Cultivation	Producer	Survey questionnaire	Phase 2
291	Md.Doulat Khan	01835319889	Baluchor	Kaptai & Karnafuli	Rangamati	South east Region-1	Fishing	Producer	Survey questionnaire	Phase 2
292	Nurul Amin Vuiyan	01818086432	Baluchor	Kaptai & Karnafuli	Rangamati	South east Region-1	Fishing	Producer	Survey questionnaire	Phase 2
293	Akbar Ahmed	01811810789	Napora,Puichori	Jaldi	Chittagong	South east Region-1	Farmer	Producer	Survey questionnaire	Phase 2
294	Rahela Begum	01834792739	Shamliar Ghona,Puichori	Jaldi	Chittagong	South east Region-1	Housewife,Handicraft	Producer	Survey questionnaire	Phase 2
295	Gul Chehara	01846957994	Shamliar Ghona,Puichori	Jaldi	Chittagong	South east Region-1	Housewife,Handicraft	Producer	Survey questionnaire	Phase 2
296	Md.Alamgir Hosen	01831193066	Napora,Puichori	Jaldi	Chittagong	South east Region-1	Vegatable cultivation,Bussiness	Producer	Survey questionnaire	Phase 2
297	Nirban Dev	01811670088	Napora,Puichori	Jaldi	Chittagong	South east Region-1	Farmer	Producer	Survey questionnaire	Phase 2
298	Rina Dev	01821707850	Napora,Puichori	Jaldi	Chittagong	South east Region-1	Housewife	N/A	Survey questionnaire	Phase 2
299	Rahima Begum	01834159827	South Joldi,Bashkhali	Jaldi	Chittagong	South east Region-1	Handicraft	Producer	Survey questionnaire	Phase 2
300	Md.Shiraj Mia	01854837615	South Joldi,Bashkhali	Jaldi	Chittagong	South east Region-1	Farmer	Producer	Survey questionnaire	Phase 2
301	Mabia Begum	01831648198	South Joldi,Bashkhali	Jaldi	Chittagong	South east Region-1	Handicraft	Producer	Survey questionnaire	Phase 2
302	Md.Mahfuz	01823395767	Chowdhurichora,Nicherbazar	Kaptai & Karnafuli	Rangamati	South east Region-1	Bussiness	Beneficiary	Survey questionnaire	Phase 2
303	Miton Das	01853013837	Chowdhurichora,Nicherbazar	Kaptai & Karnafuli	Rangamati	South east Region-1	Fishing	Producer	Survey questionnaire	Phase 2
30	Md.nahar	01840260	Chowdhurichora,Nicherbazar	Kaptai &	Rangamat	South east	Fishing	Producer	Survey question	Phase 2

4		229		Karnafu li	i	Regio n-1			naire	
305	Hasina Begum	01835279644	Brickfield,Muslimpara	Kaptai & Karnafu li	Rang amat i	South east Regio n-1	Housewife	N/A	Survey question naire	Phas e 2
306	Md.Sumon	01814834736	Chowdhurichora ,Nicherbazar	Kaptai & Karnafu li	Rang amat i	South east Regio n-1	Driving		Survey question naire	Phas e 2
307	Md.Firoz	01839682092	Chowdhurichora ,Nicherbazar	Kaptai & Karnafu li	Rang amat i	South east Regio n-1	Fishing	Producer	Survey question naire	Phas e 2
308	Rubel kumar das	01813575228	Chowdhurichora ,Nicherbazar	Kaptai & Karnafu li	Rang amat i	South east Regio n-1	Farmer	Producer	Survey question naire	Phas e 2
309	Arun Kumar das	01833254614	Chowdhurichora ,Nicherbazar	Kaptai & Karnafu li	Rang amat i	South east Regio n-1	Fishing	Producer	Survey question naire	Phas e 2
310	Mizan	01840109580	Chowdhurichora ,Nicherbazar	Kaptai & Karnafu li	Rang amat i	South east Regio n-1	Fishing	Producer	Survey question naire	Phas e 2
311	Badsha Mia	01828716090	Chowdhurichora ,Nicherbazar	Kaptai & Karnafu li	Rang amat i	South east Regio n-1	Fishing	Producer	Survey question naire	Phas e 2
312	Nur Nahar Begum	01828717708	Chowdhurichora ,Nicherbazar	Kaptai & Karnafu li	Rang amat i	South east Regio n-1	Housewife	N/A	Survey question naire	Phas e 2
313	Khokon Das	01832660725	Chowdhurichora ,Nicherbazar	Kaptai & Karnafu li	Rang amat i	South east Regio n-1	Fishing	Producer	Survey question naire	Phas e 2
314	Shimul Das	01818292493	Chowdhurichora ,Nicherbazar	Kaptai & Karnafu li	Rang amat i	South east Regio n-1	Fishing	Producer	Survey question naire	Phas e 2
315	Paijui Marma	01554725957	Chitmorom Hedmanpara	Kaptai & Karnafu li	Rang amat i	South east Regio n-1	Making Handkerchief	Handicrafts and Handloom	Survey question naire	Phas e 2
316	Babli Marma	01557132796	Chitmorom Hedmanpara	Kaptai & Karnafu li	Rang amat i	South east Regio n-1	Making Handkerchief	Handicrafts and Handloom	Survey question naire	Phas e 2
317	Juima Marma	01825028265	Chitmorom Hedmanpara	Kaptai & Karnafu li	Rang amat i	South east Regio n-1	Housewife	N/A	Survey question naire	Phas e 2

Annex 5: References for all regional reports

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