INCLUSIVE VALUE CHAIN ANALYSIS REPORT FOR SHOUHARDO III PROJECT CARE BANGLADESH

EDGE CONSULTING LIMITED
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Executive Summary

The SHOUHARDO III (Strengthening Household Ability to Responding to Development Opportunities III) Project is funded by the USAID Office of Food for Peace and implemented by CARE Bangladesh. The overall goal of the Project is to: "Improve gender equitable food security, nutrition and resilience of vulnerable people living in 8 districts in *Char* and *Haor* regions of Bangladesh by 2020." The Project intends to adopt a hybrid approach combining both market facilitation and direct transfers to achieve the target.

In order to identify and thereby analyse the highest potential value chains (VC) for the target population, the project targets poor and extreme poor men, women and youth dwelling in the *Char* and *Haor* regions of Bangladesh. The Project commissioned a study to EDGE Consulting Ltd., a private research firm in April 2016. The study team comprised of two consultants from EDGE and project staff from both CARE Bangladesh and partner organizations. The field investigation in the project areas took place in two phases –2-7 May and 4-7 June 2016. Meetings with large firms took place in Dhaka in May following the first round of field investigation.

SHOUHARDO targets two highly vulnerable regions in the country. Furthermore, it identified the locations (Upazilas, Unions and villages) which are more vulnerable compared to other parts of the same districts within the regions (for instance those Upazilas/Unions which are connected to mainland or have better road communication). That said, the project devised a very specific targeting approach to reach the most poor and extreme poor (PEP) households. PEP households include mainly landless, marginal and/or households having maximum cultivable land size of 100 decimals in the *Haor* regions and 66 decimals in the *Char* region. Men and young boys mainly work in agricultural field of their own or as wage labourers. Adult women work mostly in post harvesting activities and also take care of meagre livestock animals at home. Due to the remoteness, their access to basic services (social, political and economic) are poor compared to the people in mainland. They are also economically vulnerable due to natural disasters and suffer from periodic loss of household assets, field crops and also land erosion. Migration is a common coping mechanism during lean period where there is no agricultural work. Adult males and young boys migrate to urban areas while women, young girls and children stay back home. In *Haor* region, this seasonal migration intensity is higher compared to *Char* region as the former has only one agricultural season against two of the latter. In Hoar region, seasonal migration of entire family is also commonplace. Sadly, this current practice of seasonal migration, which is happening for years, does not seem to have improved the livelihood condition of the target population.

However, this resource poor population group holds the potential to be more economically active and linked with markets. Therefore, the project adopts a hybrid[1] push-pull strategy which builds capacities of PEP households to address barriers to entry into market systems (i.e. push strategies) while also facilitating the development of more inclusive market systems (i.e. pull strategies). Consequently, the inclusive value chain analysis considered the current livelihood portfolio of PEP households in the process of selecting the highest potential value chains and in recommending project facilitation activities.

PEP households are in debt trap. PEP households are vulnerable due to not only the natural shocks (flash floods, seasonal floods) they face, but also poor financial management skills. The overall livelihood pattern shows that the agricultural cropping intensity is comparatively lower in both the

[1] The project also considers options of direct transfer of productive assets to PEP households to 'push' them into market system – hence, referred to the whole approach as a 'hybrid' push-pull strategy

regions (single-cropped in Hoar region and double-cropped in *Char* region). Consequently, a lack of agricultural work (production or agri-labour) for a significant period in each year forces many targeted household members (male members or entire family) to migrate to urban areas. The rest who can afford to stay back carry out other non-agricultural related livelihood activities such as fishing, off-farm activities such as bamboo crafts or simply live on loans in parallel to looking after their meagre livestock asset-base. However, the most alarming part is their poor financial management – almost all PEP households are indebted with multiple loans (MFIs, local money lenders or pre-finance from buyers such as fish traders, bamboo crafts buyers etc.) and every year the size of the total outstanding amount for each household is increasing. Receiving loans at high interest or selling labour in advance have put the PEP households in a debt-trap[2]. The average loan size is about BDT 10,000 (USD 128[3]), and generally each household has 3-5 outstanding loans; the interest rate is 10% per month in the *Char* region and 8.33% per month in the *Haor* region. As a general norm, MFI loans are mainly given to women (though not widely available in *Char* region) and their male counterparts use the money in economic activities. Consequently, non-repayment or delay payment of such loans put pressure on women household members when they have to completely rely on their husbands for cash-flow. Other sources of loans are mostly accessed by men – whether adults or youths. It is obvious that if these households are integrated in promising value chains but their poor financial management of outstanding loans[4] remains unaddressed, it is less likely that they will be able to get out of poverty trap.

Selected value chains for *Haor* are maize and bamboo fish trap (*Chai*) and for *Char* are goat and maize. The selection criteria used to select the highest potential value chains for the targeted households are a) potential to engage large number of PEP households, b) potential to increase income, c) unmet market demand, d) presence of backward and forward linkages (including lead firms), e) local competitiveness and f) capacity of SHOUHARDO III to implement facilitation activities in the value chain. Following the identification of a long list of initial candidates based on desk research, key informant interviews and personnel experience five VCs were short-listed for each region – maize, vegetables, duck, dry fish and bamboo fish trap (*Chai*) for *Haor* region; and goat, maize, vegetables, jute and bamboo crafts for *Char* region. All the VCs were then analysed through the selection criteria lens and two were selected as top two candidates for each region – maize and bamboo fish trap (*Chai*) for *Haor;* and goat and maize for *Char*.

Maize appeared as a common value chain for both the regions. The northern districts of Bangladesh where the targeted *Char* region is located have been growing maize for more than a decade with significant growth rate in terms of land coverage as well as yields. Established backward and forward linkages in nearby mainland areas acted as a natural incentive for many PEP households in the Chars to adopt maize cultivation. On the other hand, the *Haor* region seems to ride the maize growth rally only recently. This recent inclusion of the region can be attributed to the growing national demand for maize. The horizontal growth (more land coverage) is currently led by new areas where alternative crops are less profitable or lands are remained fallow due to unavailability of suitable crops. Out of the four districts in *Haor* region, Kishorganj shows very high production expansion in last few years followed by Habiganj and Sunamganj. The targeted areas in Netrokona may not be suitable to promote maize, due to the agro-climatic conditions of the area. Maize is either replacing mainly paddy (in the

[2] Debt-trap is a situation where families have no option but to take on credit to pay for essentials, but the costs of keeping up debt repayments leads to further pressure on household budgets. Source: The Debt Trap: Exposing the impact of problem debt on children, May 2014

[3] Exchange rate USD 1= BDT 78

[4] The portion of a loan which is yet to be repaid.

Haor region) and pulses (in the *Char* region) driven by higher profitability or being cultivated in fallow land. Promoting maize in *Haor* region is not likely to affect the food security as average crop land-holding size is higher in this single-cropped region. Many targeted households cultivate paddy as required for household consumption and partly sell while keep part of their lands fallow due to lack of options that makes economic sense. Whatsoever, replacement of paddy by maize in certain plots and inclusion of maize in the fallow land, therefore, will allow for higher income.

The production growth of maize in both the regions is driven by the high unmet demand of maize in the country – primarily by poultry, livestock and fishery feed industry. End market analysis shows that the production in *Char* regions reaches the nearby wholesale points in the mainland through a large number of small traders or collectors. These wholesale points have been operating for many years owing to the fact that maize production is already popular in northern districts. Consequently, quite a few national as well as regional feed mills have established their production plants or procurement centres in the region. On the other hand, in *Haor* region, Bhairab in Kishorganj district seems to be the main (if not only) large wholesale point. Good road connectivity between Bhairab and Dhaka, Gazipur, Manikganj, Mymensingh, Tangail where a good number of large feed mills are located have made Bhairab an important trade hub for maize. There are also a good number of feed mills in Bhairab itself – national and regional.

Both the targeted regions also show their respective competitiveness. In *Char* region and northern Bangladesh in general, there is a second season (Kharif 1) for maize cultivation following the main season Rabi. It was found that the traders in Bhairab procure maize in Rabi season from nearby areas i.e. the *Haor* region and not from *Char* region. When the local supply is unavailable after the Rabi season, they go to *Char* region in Kharif 1 to procure maize further which shows the regional competitiveness. However, the cost of production in *Haor* region is found to be slightly higher which is offset by the higher price given by the buyers as the quality of grains is considered as better.

The value chain inter-relationship shows that the growth in *Haor* region is mainly driven by an informal contract farming system where the traders (who are also input retailers) supply inputs to the farmers and procure the harvests. On the other hand, in *Char* region maize is mostly traded in spot markets. The difference can be easily attributed to the fact that maize has been growing in large scale in northern districts for quite some time and therefore, a strong supply chain has been developed comprising large number of traders of different scale and at different tiers of the value chain. On the contrary, maize is comparatively a new crop in *Haor* region and farmers want assured buyers before they adopt it.

Maize is a labour-intensive crop that includes a range of post-harvesting activities. Men (both adults and youths) are highly active in land preparation, plantation, irrigation, fertilizing, harvesting and selling in the market. However, women play a stronger role in weeding and post-harvesting activities such as drying, cleaning, packing etc. In the downstream of value chain, from traders at different tiers up to feed processing mills, cleaning, drying, re-packing continues and these activities create wage-labour opportunities for lots of women alongside men.

The key constraints to growth are similar for both the regions. Lack of knowledge on maize cultivation, unavailability and timely delivery of good quality seeds due to the remoteness of the locations and being low priority market for the seed suppliers, lack of access to appropriate financial products, poor forward linkages in remote areas are the common constraints in both the regions. For *Char* regions, two other key constraints emerged e.g. poor knowledge on post-harvest techniques and lack of appropriate drying facilities. These two constraints did not appear as key in the *Haor* regions. Though maize cultivation is new in Haors but informal contract farming system allowed farmers to apply better

post-harvesting practices. Besides, during the harvesting time, sun-dry space is also more available in *Haor* areas compared to those in Chars.

Bamboo fish trap (*Chai*) is an off-farm value chain selected for *Haor* region. As observed, fishing is the second most important occupation for the people in *Haor* as more than six months of the year, most areas remain under water. Households who do not capture fish commercially also buy few *Chais* to capture fish for household consumption. Since it is an off-farm activity, households who are involved in making *Chais* can do it even when there is no work in the agricultural field. And more importantly, as this is a homestead based work, women and also youth family members actively take part in this activity.

There are at least 11 types of different types of *Chais* identified – used to capture different types of fish, in different levels of water, and in different locations in the project areas. The price varies according to type of *Chai* – from Tk. 40 (USD 0.51) to Tk. 400 (USD 5.13) per piece. The demand reaches its peak at the beginning of flooding season in April-May when the water level starts to rise and gradually diminishes during July-August. A *Chai* can be used only once and hence people need to buy them every year and they usually buy them in 10s or 100s of pieces. Field interviews show clear indications of increasing demand every year.

End market analysis shows that *Chai* generally does not go beyond the *Haor* region except for few specific varieties. They are manufactured as finished goods and because *Chais* occupy a relatively large amount of space, itis not cost-effective to transport long distances for all the varieties. For this reason, there are also practices where a *Chai* manufacturer is invited to a village to make *Chais* for the people there. As a result, the supply chain is simple and does not involve many different market players. Often the producer sells directly to the end users.

The region is competitive in making *Chais* though the main raw material (bamboo) is not widely grown in the targeted areas. However, bamboo is available in local markets at a competitive price. Few varieties of *Chai* used to be imported before from other districts such as Tangail, however not anymore as these are now produced locally. The region actually currently exports some specific types of *Chai* such as *Chai* for *Kuicha* fish capture is exported to southern districts of Bangladesh e.g. Comilla, Noakhali, Bhola etc.

The key constraints to growth for *Chai* production are lack of skills, lack of working capital, poor linkages between producers and wholesale buyers, lack of knowledge on production techniques and market demand for different types of *Chai*, lack of assembling services or appropriate transportation mechanisms to transport *Chai* long distances cost-effectively.

Goats are selected as another promising value chain for the *Char* region. The overall trend of goat production in Bangladesh is positive and this is the case in this region. The main variety reared is Black Bengal following Jamunapari. Though there is a positive production growth trend in terms of number of animals and number of producers, the price trend is also upward showing a high demand for goat meat across the country. Goat production is a suitable income earning occupation for the targeted people as goats give birth twice a year, require less working capital to initiate and also to rear compared to that requires for cows, can be moved easily during floods compared to cows. Moreover, women are engaged in taking care of goats and the income goes directly to their hands.

End market analysis shows that there is a large local consumption market in parallel to the national market – mainly in Dhaka, Tangail and Bogra. Therefore, a strong procurement channel is developed, though it is very informal. The supply chain is simple involving fewer different types of market actors. The targeted areas apparently have a comparative advantage in production as goats usually roam

around and find their own food, for which *Char* is ideal as there are plenty of open field except for flooding season. Key constraints to growth are poor knowledge on improved rearing, lack of knowledge on varieties, lack of access to breeding services, limited access to markets during flooding season.

Overall implementation strategy is to build on 'what works' driven by market forces and evidence-based from the field findings. All the value chains show prospects of market linkage and connecting the targeted people. Many of the targeted households are resource poor and integrating them with markets may require project support to make them economically active and competitive. However, the project support to them should be directed through market players in order to impart sustainable changes.

Broad facilitation activities in Maize (both *Haor* and *Char*)

1. In order to address lack of knowledge of maize farming of PEP producers, partner with private agri-input companies to train retailers, arrange demonstrations, farmer field days, etc. through a cost-sharing model. The project may support PEP farmers to access knowledge and try maize cultivation through introducing 'voucher' method for certain agri-inputs.
2. Identify and assist agri-input retailers cum maize traders to establish contract growing systems with PEP maize farmers to address 'access to market', 'lack of finance' and 'knowledge gap'.

Broad facilitation activities in bamboo fish trap (*Haor*)

1. In order to address 'lack of skills', partner with and assist large *Chai* producers to hire interested PEP workers (willing to learn) to provide on-the-job training and share partial wages.
2. Negotiate with and assist MFIs to develop seasonal loan products appropriate for *Chai* producers to address 'lack of appropriate financial products'. Project may share the risk of MFIs to introduce this new loan product. While negotiation between the project and the partner MFI/s will delineate all the clauses, the key aspect is such that the project will pay the MFI/s the gap amount between regular interest and subsided interest for a certain time period while the PEP borrower will pay the subsidised interest plus principal amount. Within the agreed time frame, once significant number of borrowers start borrowing money and the partner MFIs sees the scale, the project will withdraw the support and MFIs will gradually start implementing market interest rate.
3. Arrange series of linkage workshops between large buyers and newly promoted *Chai* production clusters. Project may support the *Chai* producers indirectly for each piece sold to the large buyer. This indirect support may take the form where the new production cluster offers a slightly reduced market rate to large buyers for a season only and the project pays the gap to *Chai* producers. This is to attract the large buyers to come to the new production clusters otherwise they would not come and so that newly trained producers do not lose interest for not being able to sell their products in large quantity.

Broad facilitation activities in goat (*Char*)

1. Partner with reputed private veterinary companies to train retailers/paravets through a cost-sharing model in order to address producers' lack of knowledge on improved rearing practices.
2. To address 'lack of breeding services', identify individuals to invest and operate buck services[5]. Since this will be a new business, the project may consider sharing the risks of interested

[5] Buck services refers to natural insemination services

service providers by partially contributing financially to build sheds, procure appropriate breed. In another channel, partner with BRAC/promote through DLS on AI services.

Finally, as the overall financial management skills of the PEP households are poor, in order for them to get out of 'debt trap' and be part of economic growth spiral a general recommendation beyond value chain specific ones seems very appropriate. Educate PEP HHs on basic household financial management through partner MFIs (with whom partnership developed for seasonal/appropriate loan products). Here, the MFIs have incentive to provide such training to safeguard their loans provided.

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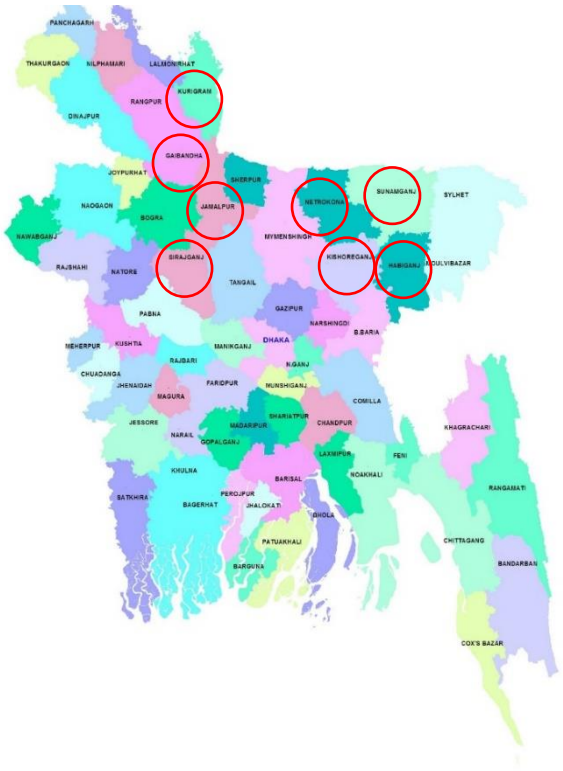
Introduction

About the Project

The SHOUHARDO III (Strengthening Household Ability to Responding to Development Opportunities III) Project is funded by USAID and implemented by CARE Bangladesh. The overall goal of the Project is to: ***"Improve gender equitable food security, nutrition and resilience of vulnerable people living in 8 districts in Char and Haor regions of Bangladesh by 2020."*** The targeted districts under *Char* region are Gaibandha, Kurigram, Jamalpur and Sirjaganj; and those under *Haor* region are Kishorganj, Netrokona, Habiganj and Sunamganj.

Figure 1: Working Areas for SHOUHARDO III



In order to achieve the goal, the Project has the *five Purposes (P) and 20 Sub-Purpose (SP)*. Purpose 1focuses on ***to Increase equitable access to income and nutritious food for both males and females***. This will be achieved through increased agricultural productivity of women, men, and youth smallholder and tenant farmers, increased crop diversity and homestead production of nutritious foods, increased access to agricultural markets, increased opportunities for off-farm income for poor and extremely poor (PEP) men, women, and youth, increased savings and access to finance, especially for women and youth and an improved enabling environment for on-farm and off-farm income generation and asset protection.

PEP households are diverse in nature. A general tendency shows that they are mainly landless, marginal or have little amount of cultivable lands. Men and young boys mainly work in agricultural field of their own or as wage labourers. Adult women work mostly in post harvesting activities and also take care of meagre livestock animals at home. Due to the remoteness, their access to basic services (social, political and economic) are poor compared to the people in mainland. They are also economically vulnerable due to natural disasters and suffer from periodic loss of household assets, field crops and also land erosion. Migration is a common coping mechanism during lean period where there is no agricultural work. Adult males and young boys migrate to urban areas while women, young girls and children stay back home.

However, this resource poor population group holds the potential to be more economically active and linked with markets. Therefore, the project adopts a hybrid[6] push-pull strategy which builds capacities of PEP households to address barriers to entry into market systems (i.e. push strategies) while also facilitating the development of more inclusive market systems (i.e. pull strategies). Consequently, the inclusive value chain analysis considered the current livelihood portfolio of PEP households in the

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process of selecting the highest potential value chains and in recommending project facilitation activities.

In order for SHOUHARDO III to identify the highest potential value chains for the target population and thereby design market facilitation activities, it commissioned a study to **EDGE Consulting Ltd**. through a competitive bidding process. This Report summarizes the steps accomplishing the task and describes the overall study purpose methodology and finally the outcomes in terms of recommendations for the project.

Purpose of the Study

The inclusive value chain analysis had several purposes; one can summarize them into three specific purposes namely

a) Orientation of the project design team (PDT) in the art of inclusive value chain analysis so that the team can continue to analyse sectors for the project in future endeavours.

b) Identification and analysis of feasible and appropriate value chains relevant for the participants of the project i.e. the poor and extreme poor of the project regions, and

c) Assessment and identification of facilitative activities “hybrid in nature if need be” in terms of the value chains selected for an action plan for the project to pursue.

Background

SHOUHARDO III aims to encourage and engage poor and extreme poor people of *Char* and *Haor* regions. The target population thus faces realities very different from the people in the mainland of Bangladesh, thereby requiring solutions which are applicable to their own context and vulnerabilities.

Char Regions

Chars are nearly accreted from the river/sea and are consequently low lying. This makes *Char* dwellers vulnerable to floods and erosions. Individual and household mobility is high and displacement is common in *Char* areas. A fragile physical environment, limited assets, reduced income opportunities, remoteness and absence of mainland institutions and services together make *Char* dwellers’ livelihoods vulnerable. *Chars* are characterized by no or poor infrastructure, and have poor and slow transportation systems or networks, making communication and accessibility across these sandy stretches incredibly difficult. The primary method of commuting to the mainland is by boat, and this is only feasible during the rainy season. In the dry season, the only option for the bulk of these people is to walk across these treacherous stretches too far off mainland, regardless the distance or time involved. Those who can afford to, use animal or push carts, but these transport modes are in short supply and not always readily available at most places.

Electricity and gas are a far reality for the *Char* people. Some households that are in close proximityto the mainland may have limited access to electric connections. However, these do not avail steady or safe supplies because the electric lines connecting them from profiteering mainland residences or businesses are illegally obtained without government approval. For the vast majority of the *Char* folk, buying or hiring rechargeable batteries is the only power source available to run basic electronic appliances like mobile phones, radios, etc., in their households. The primary sources of fuel in these areas are firewood and cow-dung. Established financial, higher educational and health institutions are also concentrated on the mainland, with no, if not limited provisions available in *Char* lands.

Char people are amongst the poorest and most destitute communities in Bangladesh. Approximately 60% of *Char* people are living beneath subsistence levels. The average monthly household income for *Char* people is estimated to be around BDT 4,580 (USD 58.72) for those who own below 100 decimals of land, and BDT 16,650 (USD 213.46) for those possessing 100 decimals of land or more[7]. Low productivity in agriculture and lack of other employment opportunities drive many men to seasonally migrate in search of work in other parts of Bangladesh.

Haor areas

A *Haor* is a wetland in the North Eastern part of Bangladesh, which is physically shaped like a bowl shaped shallow depression. It is a mosaic of wetland habitats including rivers, streams and irrigation canals, large areas of seasonally flooded cultivated plains and hundreds of *Haors* and *beels*.[8] Large areas of Sylhet, Mymensingh, MaulviBazar, Sunamganj, Habiganj, Kishoreganj and Netrokona districts are covered by many Haors among which the said project targets the last four districts. During July to November, these areas go under deep water and look like seas with erodingwater surfaces due to flash flooding.

Compared with other major natural forms of landscape, *Haors* are young, dynamic and physically unstable. Transport and communication is very fragile in *Haor* areas. Roads get submerged in water during the wet season and waterway becomes the only route of communication with boats and trawlers as the main modes of transportation. The economy of the *Haor* depends on production of crops such as rice, jute, pulses, maize and fisheries and livestock.

Poor communication limits access to markets and opportunities to increase production. Lack of markets and power supplies has limited the growth of the non-farm sector also. Although NGO micro-credit is generally available, there is also little space in the cramped island settlements to keep livestock or carry out other home-based enterprises. The low level of agricultural productivity limits agricultural incomes and the demand for agricultural wage labour is also low (outside of the peak harvest seasons). Fishing in the *Haors* is an important income source for many people. During the rainy season the whole area turns into one single water-body and becomes a huge treasure of fish. Land ownership is also skewed in favor of larger holdings, with the 26% of farmers (over 2.5 acres) operating in 65% of the land in the *Haors*. Many fishermen have changed their occupation, and those who still make their living from fishing in the *Haors* have to pay money (or give a share of the catch) to get 'fishing rights'. Like in *Char* areas, many men, women and also entire families seasonally migrate to other parts of Bangladesh in search of work.

[7]Maize value chain report on Northern *Char* areas of Bangladesh 2013, <www.mdfbd.org/wp-content/uploads/2013/06/Maize.pdf>

[8]Hussain and Salam, Basic Service Delivery Advocacy: Review Report, Development Wheel (DEW), 2007. SuanPheng Kam, Manik Lal Bose, Tahmina Latif, et al. Geographical Concentration of Rural Poverty in Bangladesh, Paper 38,Centre for Policy Dialogue,2004

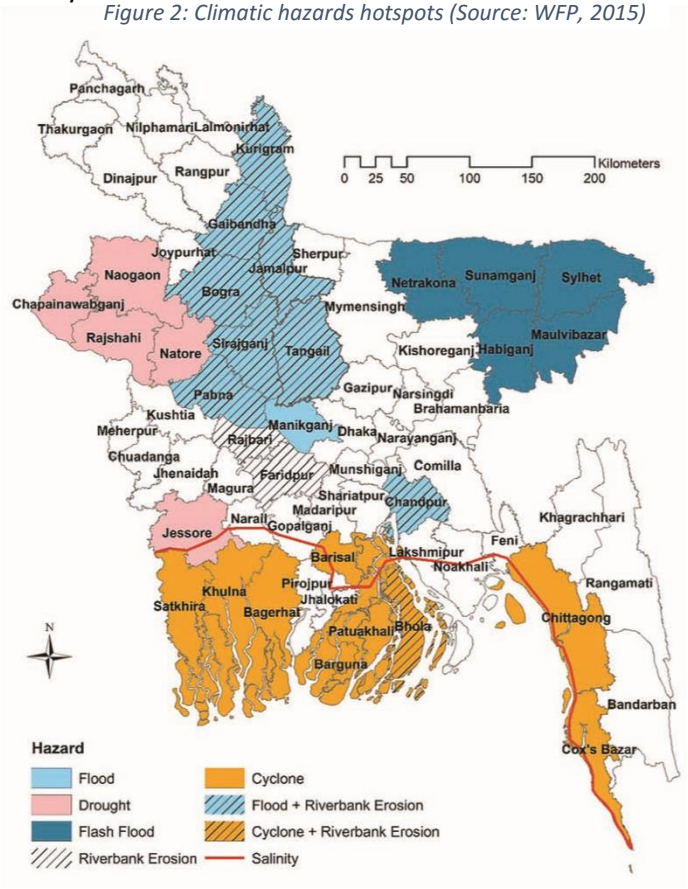
Vulnerability of the Project Areas

Both the regions are thus highly vulnerable to shocks in the form of flooding, river bank erosion and flash floods. (WFP, 2015). This thus limits the growth opportunities in these areas making the lives of poor and extreme poor incredibly hard to sustain. As the earning opportunities in both regions are limited, this leaves the general population little choice but to migrate to other regions for earning their bread and butter. Most of the households are thus de facto female headed in practice as the males generally travel extensively to engage in economic scopes of employment. Despite all the challenges, lives are still going on through persistence and maximization of opportunities within the limited scopes. Several value chains are already existing in the *Char* and *Haor* regions which are inclusive in nature, some offer better opportunities to grow whilst some remain as stagnant sectors allowing just for basic sustenance and no way out of the vicious poverty cycle.

Livelihood patterns in the project areas

Primary field findings through rapid household assessment of the target participants reconfirmed secondary findings of the realities they face on a day to day basis for their livelihoods. In the *Haor* region it was found that land holding was relatively high and access to cultivable land was also higher when compared to the *Char* region. The major earning sources for the PEP households in the *Haor* are from agriculture mainly rice/paddy as the region is a single crop area. Other sources of income are, fishing, agriculture wage labour, and income through migration in Dhaka, Sylhet, Comilla, Noakhali and other districts for working in brickfields, earth work, rickshaw, van pulling, etc. Most migration takes place from December till March when there is less work in the agricultural field and fishing opportunity reduces. During this time, family migration to brickfields in Dhaka, Nayraynganj, Savar etc. are very common. Men usually migrate during flooding season but usually towards the later part (starting from October when fishing gets restricted by elite people) in areas such as Dhaka, Sylhet, Comilla, Noakhali for earthwork, rickshaw, van pulling etc.

Figure 2: Climatic hazards hotspots (Source: WFP, 2015)



The frequent flash floods during the April – May season, leaves many households vulnerable to crop losses. Fishing the second most important source of livelihoods is possible primarily during June to October, after which reduction of water levels creates pockets of water (beels), where the local elites restrict access to the fishermen in general. The assessment also revealed that the financial management practices of the households, was poor. PEP households are generally engaged in advance selling of labour and have borrowing habits for investing in fishing, cultivation and even for coping with flooding seasons when there is limited scope to earn. This habit is very concerning as it leads to cyclical 'debt traps' followed by poor savings culture

During November-December, when the cultivation period starts, farming PEP households borrow money for about 5-6 months to buy agricultural inputs. The harvesting season begins in April. PEP households who live on selling agri-labour (or depends on selling agri-labour alongside farming to maintain their family expense) sell agri-labour by January-February in advance for harvesting time in April as between plantation and harvesting time (December – March) there is not much work in the agricultural field. The 'debt trap' begins this way. When there is early-flood or crop-loss, the farming households cannot repay the loan which they had planned to repay by selling the harvests. Meanwhile, they have continuous family expense also. Consequently, they borrow money further to pay back the earlier loan and also to maintain family. When the next cultivation season comes, they borrow money again. Since the area is vulnerable to natural disasters, most households have fallen into this debt trap. Families which also live on fishing, they take loans to buy fishing equipment. The fish traders also play an exploitative role to keep the fishing households indebted and never allow them to pay back the loans completely. This way, they make sure the fishermen come back to them to sell fish (in a reduced price than market rate) and adjust the loans. This is a never ending game. . It was observed that the average loan size is BDT 10000 (USD 128.21[9]), and generally each household has 3-5 outstanding loans, the interest rate is 10% per month in the *Char* region and 8.33% per month in the *Haor* region. Most of such loans are taken informally form local money lenders (or fish traders for fishing) and not much from MFIs.

Table 1 Typical livelihood pattern in the Haor region

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<tr><td></td><td colspan="12">Typical livelihood pattern in Haor areas</td></tr>
<tr><td>Months in English</td><td>Jan</td><td>Feb</td><td>Mar</td><td>Apr</td><td>May</td><td>Jun</td><td>Jul</td><td>Aug</td><td>Sep</td><td>Oct</td><td>Nov</td><td>Dec</td></tr>
<tr><td>Bangla Months</td><td>Pou-Mag</td><td>Mag-Fal</td><td>Fal-Choi</td><td>Cho-Boi</td><td>Boi-Joi</td><td>Joi-Ash</td><td>Ash-Sra</td><td>Sra-Bha</td><td>Bha-Ashw</td><td>Ashw-Kar</td><td>Kar-Ogr</td><td>Ogr-Pou</td></tr>
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<tr><td colspan="6">Agriculture</td><td></td><td></td><td></td><td></td><td colspan="2">Agriculture</td></tr>
</table>

In the *Char* region the local context though broadly similar, there are several differences. Land access and holdings are lower in comparison to the *Haor* region. Thus proportion of landless and marginal dwellers, are much higher. Cultivation is for two seasons primarily; Rabi and Kharif 1. In general, (and also for PEP households) major crops consisted of maize, pulses and oil seeds, potatoes, onions in Rabi, and jute and maize in Kharif 1. Livestock – cattle, goat, and poultry are common in most households as well. July through September there are incidences of flooding, often times damaging crops as well as creating hindrance in livestock management. In terms of household financial management, better practices are observed, loans are generally avoided, but incidences of sickness or special occasions in the family tend to instigate the requirement of seeking loans to cope with the circumstances. There are no such formal Microfinance institutions from whom the population engages in taking loans; the local money lenders are the primary source of loans for majority of the PEP households. These are usually term loans (for a fixed period with interest about 8.33% per month) of 4-6 months.

[9] Exchange rate USD 1= BDT 78

Migration is common for the household members. However this is more prominent during the flood season as availability of work is low during this time. Unlike the *Haor* region only male members (both adults and youths) of the households migrate from the *Char* regions. Most travel to surrounding districts, some migrate even as far as Dhaka to sell labour in agriculture, get engaged in activities such as carpentry, rickshaw and van pulling, etc. Flooding in the region leads to relatively no cultivation during the months of July to September creating a spike in migration as well as loans taken. Women generally stay back and engage in heading the household. They also engage themselves in rearing livestock animals and backyard poultry. However, in the months of July to September flooding makes it difficult for most to provide food and housing to the livestock; similarly during winter the inclination of livestock to fall sick, renders many of the household to sell their livestock.

Table 2 Typical Livelihood pattern in the Char regions

<table>
<tr><td></td><td colspan="12">Typical livelihood pattern in Char areas</td></tr>
<tr><td>Months in English</td><td>Jan</td><td>Feb</td><td>Mar</td><td>Apr</td><td>May</td><td>Jun</td><td>Jul</td><td>Aug</td><td>Sep</td><td>Oct</td><td>Nov</td><td>Dec</td></tr>
<tr><td>Bangla Months</td><td>Pou-Mag</td><td>Mag-Fal</td><td>Fal-Choi</td><td>Cho-Boi</td><td>Boi-Joi</td><td>Joi-Ash</td><td>Ash-Sra</td><td>Sra-Bha</td><td>Bha-Ashw</td><td>Ashw-Kar</td><td>Kar-Ogr</td><td>Ogr-Pou</td></tr>
<tr><td rowspan="6">Livelihood pattern</td><td></td><td colspan="5">Agri-labor</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td><td colspan="3">Migration</td><td></td><td></td></tr>
<tr><td colspan="6">Agriculture</td><td></td><td></td><td></td><td colspan="3">Agriculture</td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td><td colspan="3">Flooding</td><td></td><td></td><td></td></tr>
<tr><td colspan="6">Livestock - cattle, goat, poultry</td><td colspan="3">(due to flooding livestock usually difficult to keep thus many are sold)</td><td colspan="3">(due to seasonality, livestock is prone to disease thus many are sold)</td></tr>
</table>

Thus the context and realities of the regions and the PEP households set the foundation of the inclusive value chain analysis for EDGE and the PDT (project design team) to select appropriate value chains and then design facilitation activities, which will likely lead to better inclusion of the PEP households in the market system enabling them to earn and improve their livelihoods in a sustainable manner.

Methodology

Value Chain analyses are indicative not representative, thus convergence of information was looked at to gauge an idea about the market itself, roles and practices of the stakeholders. Based on the purpose and nature of the task, EDGE Consulting Ltd., had divided the assignment into three segments, namely:

Orientation of the team: EDGE conducted a three-day orientation workshop **(27th April 2016 to 29th April 2016)** for the project design team consisting of members from SHOUHARDO III and its partner NGOs. The training introduced the team to the theoretical and contextual aspects for conducting inclusive value chain analysis. Theoretical aspects of issues such as what is a value chain, the value chain approach, value chain selection criteria, weighted short-listing matrices, value chain analysis and its elements, question guides, identification and assessment of market based solutions

and identification of facilitation activities. Practical and contextual aspects were also incorporated in the mix to expedite the learning process. The workshop thus consisted of a field session where the participants were familiarised to using question guides. This further allowed for the project design team to become familiar with core concepts as well as be prepared for the hands-on experience of actually conducting a value chain analysis which followed the orientation workshop. A key outcome of the orientation was the short-listing of 5 value chains for each of the regions.

Field investigation: EDGE divided the field investigation into two rounds. First round included focus group discussions to understand the dynamics of the PEP households, their current and potential engagement in value chains; Leading to a base for value chain selection and corresponding analysis. A key output from the first round was selection of 2 value chains per region and corresponding analysis of the selected value chains. The second segment of the field investigation was to identify and assess market based solutions of the selected sectors. These were undertaken with the PDT from **2nd May to 7th May 2016,** and **4th May 2016 to 7th June 2016** respectively.

Action plan development: having identified potential interventions, EDGE provided guidance to SHOUHARDO III in terms providing an action plan[10] for engaging with Market Based solution providers so that they can engage in implementing interventions in the selected value chains.

Several steps were followed and several tools[11] were used during the undertaking of the inclusive value chain analysis so that the project team is intricately familiarised with the process. This enables the team with the knowledge and skill set to undertake similar activities ***independently*** in the future.

Results and Analysis

Summary of relevant value chains

The Poor and Extreme Poor (PEP) household assessment reconfirmed major findings of the literature review and the discussions within the PDT. The target population was indeed, for the most part, inactive in the market. Their livelihoods were primarily based on providing manual labour (resulting in a high rate of migration) and engaging in subsistence agriculture/livestock rearing practices inclusive of rice farming, homestead gardening and livestock rearing. Unlike what was initially assumed, field findings revealed that in general PEP engagement in off farm activity was minimal, leading to a greater concentration on 'on-farm value chains', for earning a living.

The major value chains of relevant in terms of engagement of PEP are as follows:

Region	Value Chain	Characteristics	Region	Value Chain	Characteristics
Char	Rice	High PEP involvement in terms of production and in the form of labour	*Haor*	Rice	High PEP involvement in the form of labour and production
	Jute	PEP involvement in the form of production and in the form of labour		Maize	PEP involvement high in the form of maize production

[10] In the form of this report

[11] Tools utilized have been provided in the training report.

	Cows	PEP involvement of medium level in the form of rearing cows		Duck	Very high involvement of PEP in the form of rearing ducks
	Goats	Very high involvement of PEP in the form of rearing goats		Dry Fish	Limited involvement of PEP household in the activities of dry fish sector.
	Maize	High level of PEP involvement in maize production		Fish	High involvement in the form of captured fish, and limited in terms of cultured fish production.
	Vegetables	High involvement in terms of homestead gardening		Vegetables	High involvement in terms of homestead gardening
	Bamboo crafts	Low PEP involvement in the form of artisans		Bamboo crafts	Healthy involvement of PEP households in certain areas for certain types of bamboo crafts being produced and consumed.

Thus it was observed that there are several value chains where the PEP households are actively involved to earn a living. The range of value chains are quite diverse and extensive given each sub area of the regions, presents its own opportunities and challenges.

Value Chain Selection Criteria

The Project design team with guidance from EDGE Consulting Ltd. during the orientation workshop had agreed on a list of shortlisted[12] value chains for each region. This short listing was done based on findings of secondary literature, learned perspective of the project design team and in consultation with EDGE and relevant CARE SHOUHARDO III members. Armed with the shortlisted value chains the PDT commenced field investigation to select and correspondingly analyse two value chains one on-firm and one off-firm per region i.e. 4 Value chains in total.

Table 3 Shortlisted value chains as per areas (output of orientation workshop)

Region	Value Chain	*Region*	Value Chain
Char	Vegetable (Brinjal, Chili, Sweet Gourd, Bottle Gourd)	*Haor*	Vegetable (Tomato, Chili, Country Bean)
	Maize		Duck
	Jute		Maize
	Goat		Dry Fish
	Bamboo Crafts		Bamboo Crafts

[12]The short listing method has been described in detail in the training report provided to CARE after the orientation workshop.

Selection Criteria:

EDGE, during the orientation workshop, in discussion with the team as well as based on its extensive understanding of the value chain program design jointly set 6 criteria, which were judged to be the best fit for SHOUHARDO III. The criteria along with their respective weightage were as follows:

Table 4 Weighted Ranking Matrix

Sl	Criteria	Explanation	Weight
1	Potential to engage large number of PEP HHs particularly women	- VCs which currently engages PEP HHs and also hold potential to engage further - Current engagement and also opportunity for more women to get engaged - Investment capacity in terms of input and other costs	**3X**
2	Potential to increase income for PEP HHs	- Comparative income with other VCs they are engaged in - Value addition prospects - Evidence of better practice and income	**3X**
3	Unmet market demand	- Evidence of demand exceeding supply - Buyers' tendency to book harvests trough formal/informal pre-financing	2X
4	Presence of backward and forward linkages and also lead firms	- More value chain tiers engaging different actors - Large firms involved in the value chain as change drivers - Presence of support service providers	2X
5	Local Competitiveness	- Ability to compete with other areas – regional or national or international - Have comparative and/or competitive advantage	2X
6	Capacity of SHOUHARDO III to implement	- Past experience to work in the value chain - Appropriateness to implement the activities and bring results within project life span	1X

Value Chain Selection Process and Outcome:

Extensive discussion was facilitated by EDGE in order to ensure that the PDT was not only providing the best inputs from their field findings, but also to ensure that the SHOUHARDO III team is also gaining dexterity in the aspect of value chain analysis and its tools and processes.

The tables below illustrate two of the findings summary; this was similarly undertaken for all the shortlisted value chains.

Table 5: *Illustrative Case: Haor Area findings and outcome*

Dry fish

Criteria	Kishorganj	Habiganj	Netrokona

1. Potential to engage PEP	-Some PEPs HHs make dry fish but for own consumption. Dry fish making starts from October when supply of small fresh fish becomes higher as water starts drying. -There are only few specific communities (Hindu religion) in specific locations (and not wide spread) who are engaged in dry fish making. - Women are highly engaged in cleaning, drying, processing (i.e. most activities after capturing fresh fish which is done by men)	- PEPs are not found in the dry fish processing as they are engaged in some other livelihood works which makes more economic sense. -	PEPs were not found to produce dry fish. Not much production of dry fish in the area as well.
2. Income increase potential	-As supply of capture fish is decreasing, may not process in large scale to increase income to a significant level.	- The potential is not low due to poor competitiveness	Unknown as not found as such.
3. Unmet market demand	The overall demand for dry fish in this region is met by imports from Chittagong (dried sea fish) while local supply is decreasing. Consumers also have a shifted tendency to opt for dried sea fish.		
4. local Competitiveness	Local dry fish production is losing its competitiveness for three reasons. First, fresh water fish (due to phenomenal growth of fish culture in the country) is available throughout the country year-round at affordable price even for the poorest people. Second, the supply of small inland capture fish is decreasing making it costlier to make dry fish. Third, dried sea fish has been replacing dried fresh water fish as it comes with a different taste and at cheaper price. Therefore, consumer buy more fresh fish when fresh water fish is concerned and buy dry sea fish when dried fish is concerned. Kishorganj district is still surviving and partly producing dry fish due to the presence of a large dry fish wholesale market in Bhairab (within the district). However, there is indication of losing market share by local dry fish against the imports and many dry fish traders shut down or moved to deal with dried sea fish.		
5. Backward and forward linkages (incl. lead firms)	There is no such large institutional buyer, but large networks of people are engaged for trading and retailing.		
6. Capacity of SHOUHARDO III to implement	Yes	Yes	Yes

Bamboo crafts

Criteria	Kishoreganj	Habiganj	Netrokona
1. Potential to engage PEP	- One particular product Chai is produced in large scale. Every year it needs to be replaced. Fishing is a common occupation of most PEPs. It is labor intensive and can be conducted at homestead	Fishnet - Chai was not found as such. But other products were found.	Same as in Habiganj.

	level. Women and family members get engaged. -Other bamboo products also have market in rural communities particularly during rice harvesting time. -Some other products are required all year-round for construction works.		
2. Income increase potential	- can be a HHs based income earning option when there is no work in the field or water.	Similar to Kishorganj	Similar to Kishorganj
3. Unmet market demand	Demand is high as every year new Chai is required. Other bamboo products also have year round demand though with some seasonal variations.	Similar to Kishorganj	Similar to Kishorganj
4. Competitiveness	Though bamboo is not grown in Haor areas, there is an abundance of labor to manufacture these goods.	Similar to Kishorganj	Similar to Kishorganj
5. Backward and forward linkages (incl. lead firms)	An informal network is present though there is no large scale institutional buyer.	Similar to Kishorganj	Similar to Kishorganj
6. Capacity of SHOUHARDO III to implement	Yes	Yes	yes

Weights were assigned to the criteria as per their relative importance, thus a weighted ranking matrix (developed during the orientation session) was used to short list the value chains for analysis.

The team based on the field findings as previously illustrated proceeded to rank each sector on each criterion on a comparative basis, for each of the regions.

Haor region results: Maize and duck value chains came out on the top based on the aggregate results, the off farm value chain of bamboo crafts in the *Haor* region came out as the fourth, as it had scored relatively well and as a part of the learning process the team deemed it feasible to be selected as the off farm value chain. Thus ***Maize*** and ***Bamboo crafts (fish trap - Chai)*** were the selected value chains for the *Haor* region.

Table 6: Weighted ranking matrix scoring of value chains for selection in the Haor region

Score: 1-5, 5 being the highest		***Haor* region**									
		Value Chain									
CRITERIA	Weight	**Maize**		**Veg**		**Duck**		**Dry fish**		**Bamboo crafts**	
		score	weighted score	Score	weighted score	score	weighted score	score	weighted score	score	weighted score

PEP engagement	3	3	9	3	9	5	15	2	6	3	9
Income potential	3	4	12	3	9	4	12	3	9	4	12
Unmet market demand	2	5	10	5	10	3	6	3	6	3	6
Backward forward linkage (plus lead firm)	2	5	10	3	6	3	6	3	6	3	6
Competitiveness	2	4	8	2	4	4	8	3	6	3	6
SHOUHARDO III capacity	1	4	4	5	5	4	4	2	2	3	3
TOTAL			**53**		43		51		35		**42**

Char region results: Goat and Maize value chains came out on the top based on the aggregate results, the off farm value chain of bamboo crafts in the *Char* region came out on the bottom with significant variance, as it failed to score significantly in most of the selected criteria. It is noteworthy to mention that the field findings revealed that the PEP population was rarely engaged in any off farm activity. High rates of migration were also found amongst the PEP population, who were primarily travelling outside the region in search of work such as day labour, carpentry and others. The group thus decided to go ahead and select ***Goat*** and ***Maize,*** Value chains in the *Char* region.

Table 7: Weighted ranking matrix scoring of value chains for selection in the Char region

Score: 1-5, 5 being the highest		***Char* region**									
		Value Chain									
CRITERIA	weight	**Goat**		**Maize**		**Vegetables**		**Jute**		**Bamboo crafts**	
		score	weighted score	Score	weighted score	score	weighted score	score	weighted score	score	weighted score
PEP engagement	3	5	15	3	9	3.5	10.5	2	6	1	3
Income potential	3	5	15	4	12	3.25	9.75	4	12	1	3
Unmet market demand	2	5	10	4	8	3	6	4	8	1	2
Backward forward linkage (plus lead firm)	2	4	8	5	10	3.25	6.5	4	8	1	2

Competitiveness	2	5	10	3	6	3.5	7	3	6	1	2
SHOUHARDO III capacity	1	5	5	5	5	5	5	4	4	2	2
TOTAL			63		50		44.75		44		14

Selected Value Chains:

Thus 4 value chains i.e. 2 per region were selected for further analysis by the PDT.

Table 5 Selected Value Chains as per region

Selected Value Chains			
***Haor* Region**		***Char* Region**	
Maize	***Bamboo Crafts (fishnet - Chai)***	***Maize***	***Goat***

It was evident from the analysis that there are several other potential value chains that the SHOUHARDO III team may deem fit to pursue further in their future activities, namely ducks, vegetables and fish[13] in *Haor* region and similarly vegetables, jute and fish in the *Char* region. As value chains are dynamic and sensitive to new technologies, sectors such as fish may be even considered with a full in-depth analysis if feasible technologies are available for perusal and dispersion with a commercial incentive at the participant level.

Sub Sector Analyses

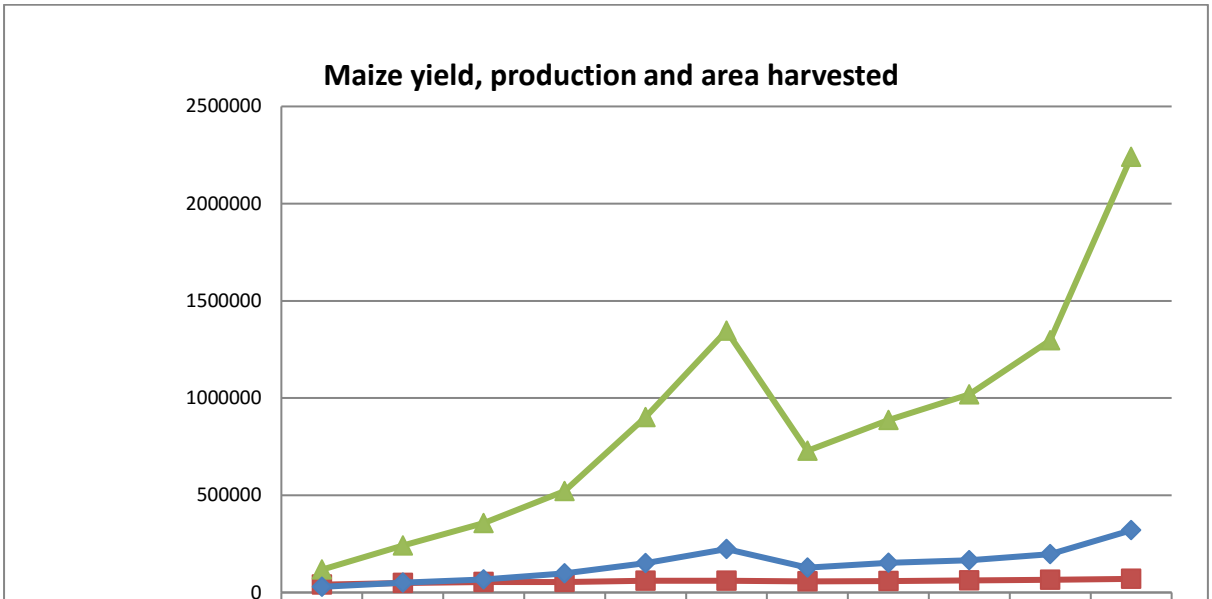
Maize Value Chain Country Perspective

The Maize Sector in Bangladesh has been experiencing tremendous growth over more than a decade. Production, area harvested and yields have been increasing significantly; Annual growth rates [14] from 2003 to 2013 were 23.73% for production, 18.99% for area harvested and 3.98% for yield in Bangladesh. Currently there are more than 450,000[15] maize farmers in the country and the number has been on the rise. The maize sector has not only experienced vertical growth but also horizontal

[13]Worldfish technology low-cost WISH(water and fish) pond may be considered based on its feasibility
[14] Source: FAOSTAT
[15] Source: http://katalyst.com.bd/maize/

growth, where new areas have come in under maize cultivation. *Chars* and *Haors* are also areas where maize has been able to enter and have begun to gain popularity.

Figure 3: Trend of maize production, yield and area harvested in Bangladesh

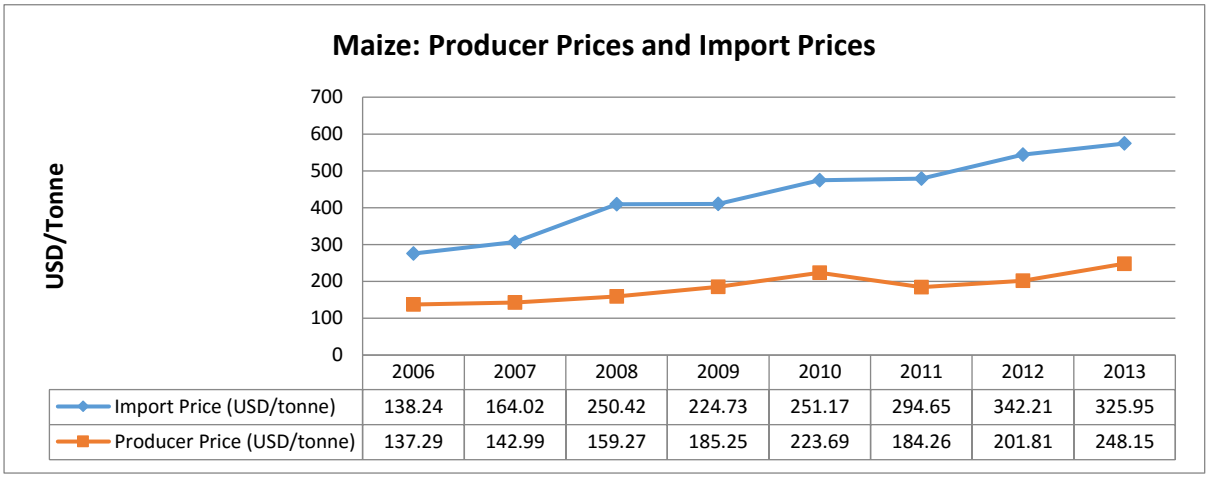


	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Yield (Hg/Ha)	40334	48243	53311	52998	59812	60172	56831	58378	61512	65838	70000
Production (tonnes)	117255	241460	356280	521525	902150	1346470	729629	887391	1018287	1297717	2240000
Area harvested (Ha)	29071	50051	66830	98404	150832	223770	128386	152009	165542	197108	320000

Maize is not cultivated for human consumption in Bangladesh; it primarily serves the feed industry for poultry, cattle and fish feed in Bangladesh. Currently local production is only able to supply 60-70% of this demand, whilst 30-40% is met via imports primarily from India. Producer prices have also been steadily increasing alongside growth in production. Comparisons between producer and import prices

reveal that the local produce remains in price parity with imports in terms of wholesale prices. It can thus be deduced that imports are primarily filling up the gap in local production.

Figure 4: Trend of producer price and import price of maize



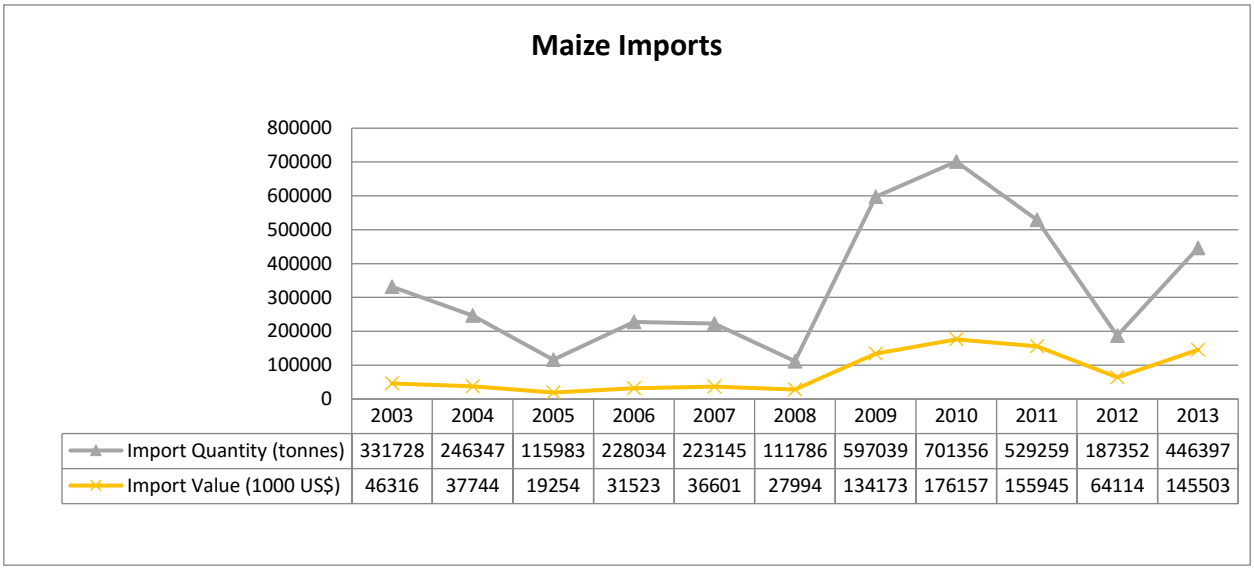
	2006	2007	2008	2009	2010	2011	2012	2013
Import Price (USD/tonne)	138.24	164.02	250.42	224.73	251.17	294.65	342.21	325.95
Producer Price (USD/tonne)	137.29	142.99	159.27	185.25	223.69	184.26	201.81	248.15

The dependency on poultry for maize sector is reflected in the import trends as we observe dips in the mid-2000sand in 2012 due to the slump in the poultry sector because of the avian flu[16]. However, given the expected growth of 16% [17] per annum in the poultry sector alone the demand for maize can be foreseen as very high, enabling all production to have markets in the realms of Bangladesh. This is

[16] Source: http://www.thepoultrysite.com/bird-flu/bird-flu-news.php?country=bd
[17] Source: http://www.thedailystar.net/business/poultry-sector-eyes-double-digit-growth-2927

currently being complemented by recent alternative usage of maize in the forms of starch and ingredients in processed food products.

Figure 5: Maize import trends in Bangladesh



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Import Quantity (tonnes)	331728	246347	115983	228034	223145	111786	597039	701356	529259	187352	446397
Import Value (1000 US$)	46316	37744	19254	31523	36601	27994	134173	176157	155945	64114	145503

Maize requires less agricultural labor, fertilizer and less irrigation compared to rice, but it offers more in terms of yield and also income. As a result, maize production growth in the last decade - both vertically (increase in yield) and horizontally (increase in area coverage and multiple crop cycle in a year), was positive. Although productivity wise the country has achieved the highest yield in the region it is well below its potential. The current average national yield of maize (of year 2013 from Figure 1) is about 7 MT/Ha and it also varies across different regions, generally maize cultivated in Rabi season can produce about 10 MT/Ha. The average yield per hectare in Patgram of Lalmonirhat district is about 60% higher to that of national average.[18] Therefore, currently the country has the potential to increase its land productivity extensively.

Comparison between rice and maize (1 acre or 100 decimal of land)

	Rice	Maize
Production cost (USD)	321	385
Yield (Tons/acre)	2.8	3.6
Farm gate price (USD per ton)	135	160
Net income per acre (USD)	378	576
Benefit/Cost ration	1.18	1.5

Source: Indicative case from Mithamoin, Kishorganj, *Haor* region

Maize Value Chain - *Haor* Perspective

Maize is a new crop in the *Haor* regions and is not widely cultivated as well; there are pockets of areas where maize cultivation has just begun, however the prospect of maize in some of the areas are very high.

Specific observation: In the *Haor* regions certain "PEP-households are found under informal contractual arrangements and they are comparatively better performing i.e. experience higher yield. Observations indicated that "Yield" difference is mainly due to two reasons – access to finance (working capital) and poor cultivation knowledge. It was also observed that the number of local

[18] Katalyst, Maize Sector Brief

traders are increasing, having higher capacity to buy than available in local market creating a potential supply gap. Regional traders buy Kharif maize from North but Rabi maize from *Haor* areas showing local competitiveness as mentioned above.

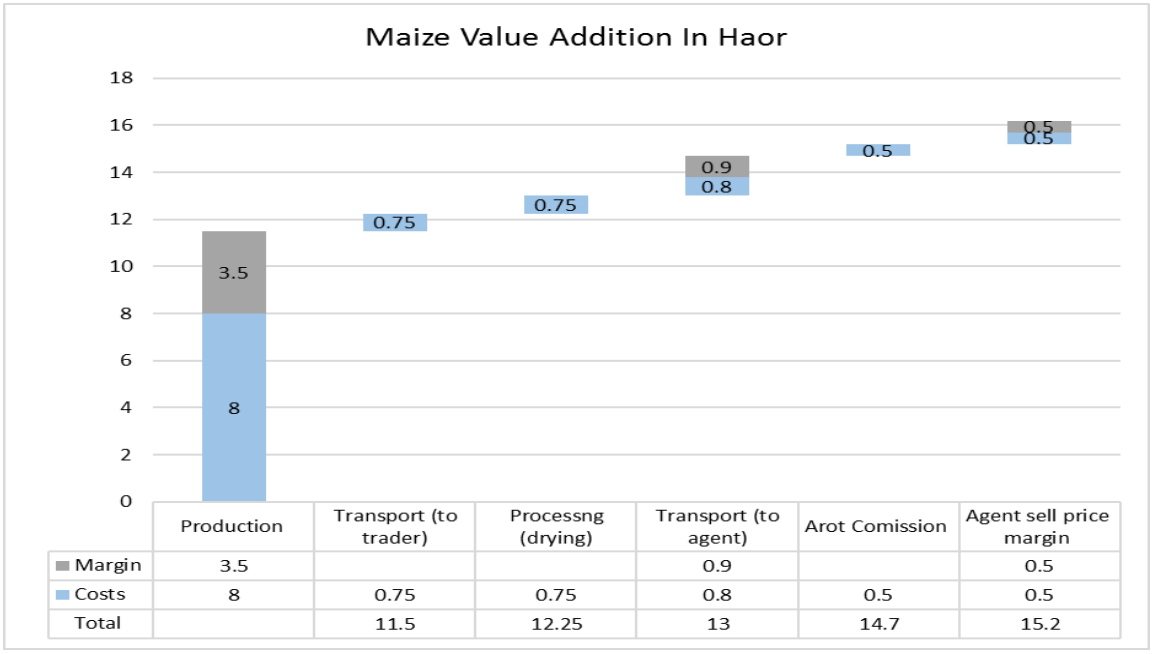
End Markets for Haor: Bhairab (Kishorganj district) is the main destination market for the maize produced in the area. Large traders and feed-mill supply agents procure maize in Bhairab and transport the national feed mills; similarly, Maize also reaches Bhairab from major production clusters of northern districts. Bhairab thus is the point of supply of maize to national feed mills as well as feed mills in the region and local crushers.

Local Competitiveness in Haors: Regional traders buy maize from this region during Rabi season, the prime production season, whilst they procure from northern districts in Kharif, as there is no production of maize in the Kharif season. Quality of local grains are considered as better by buyers in Bhairab market reflected in price, Tk. 1-2 higher per kg than those from northern districts. It was also found that cost of production is comparatively higher to that in northern districts – Tk. 8 per kg (including shelling) against Tk. 7 per kg. The production cost is relatively high at farm end but it was observed from field findings that farmers generally keep a healthy margin as well. We also observe that the margin decreases higher up the value chain i.e. at trader and agent levels, 0.9 and 0.5 Tk per Kg respectively.

Value addition in maize in Haors:

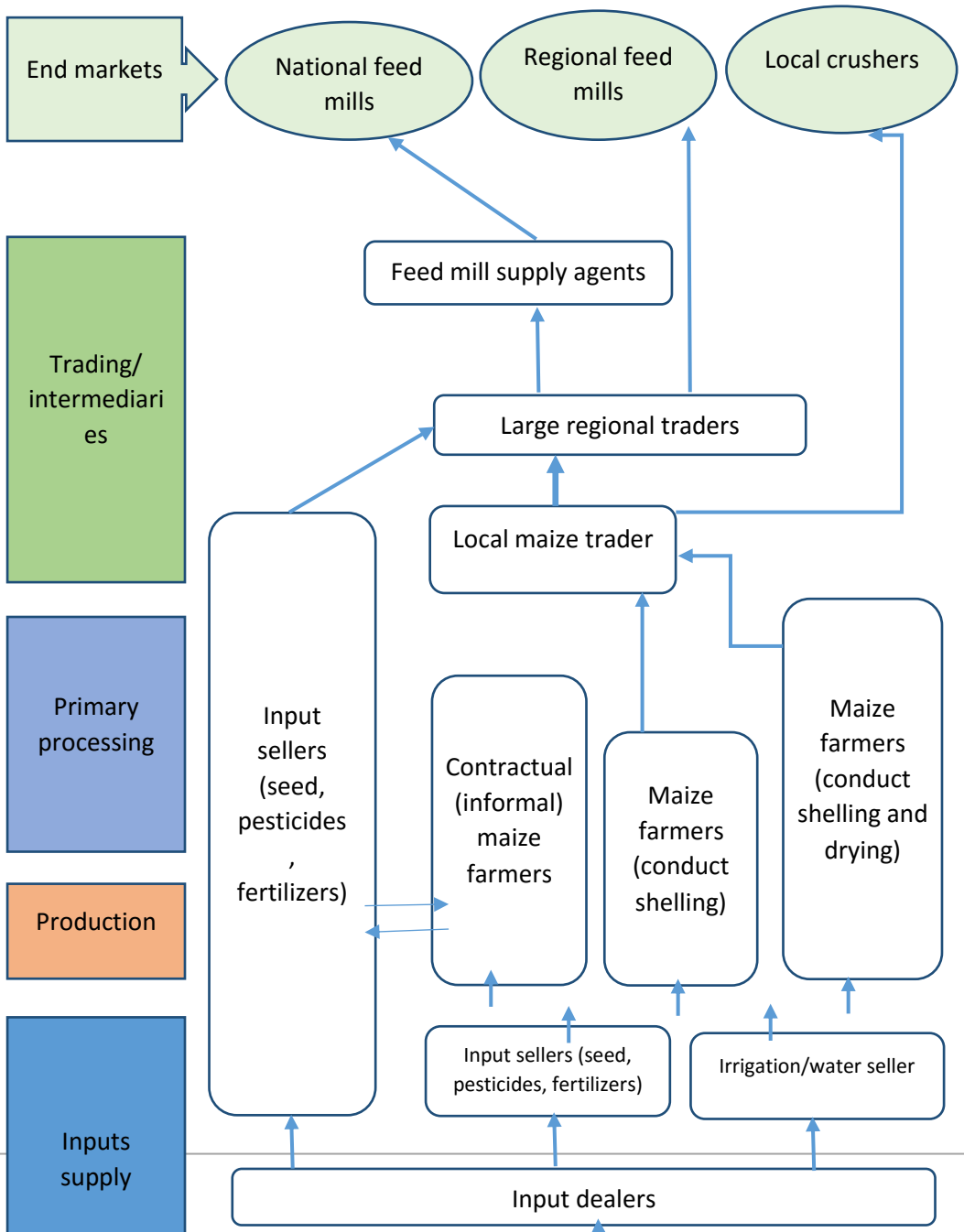
The following diagram shows the cost structure (and thereafter margin) at different levels of the value chain. As can be seen, farmers against a production cost of Tk. 8 per kg takes a margin of Tk. 3.5. The following costs e.g. transport to trader and drying (that includes margin also) are borne either by farmers or traders buying from farmers. To avoid incurring further costs, farmers in most cases tend to sell from farm-gate. Traders, thereafter, dry them in nearby facilities by deploying labourers and transport to their warehouse or transport it first to their warehouse where drying facilities are available.

Figure 6: Value addition of maize in *Haor* region



	Production	Transport (to trader)	Processng (drying)	Transport (to agent)	Arot Comission	Agent sell price margin
Margin	3.5			0.9		0.5
Costs	8	0.75	0.75	0.8	0.5	0.5
Total		11.5	12.25	13	14.7	15.2

Value Chain Map for Maize In *Haor*



Description of Value Chain Actors

Input Company: Input companies are the firms engaged in supplying the inputs for production. These inputs include seeds, fertiliser, pesticides etc. There was presence of several national level companies engaged in supplying these products. They play a critical role in the distribution and availability of products.

Input dealers: Are the first layer of distributors for the input companies. They generally buy in bulk amounts and then redistribute it input sellers. They engage in selling to farmers near the shops as well.

Input sellers: Input sellers are resellers of the inputs (seed, fertiliser, pesticides) at the farm level. They are the contact point for the farmers, and they also play a critical role in disseminating information to farmers about production technology. In *Haor* region a specific type of input seller was observed who further engages in supporting maize farmers with finance in the form of delayed payment for inputs and also buys back the produce and sells to the large regional traders.

Irrigation water seller: Despite lower requirements of irrigation for maize cultivation, timely irrigation is critical. To irrigate the cultivable lands farmers generally purchase water from the water sellers, who provide the service of usage of the pump against different payment mechanisms.

Maize Farmers: They are farmers who engage in maize production and usually have access to cultivable land of nearly 100 decimals either in the form of own/leased land. As of the study date, farmers were found to cultivate maize either in fallow land or by replacing paddy partly. Farmers generally carry out the shelling practice (removing the grains from the cob).

A second type of farmers was also observed farmers who are engaged in drying maize grains as a post-harvest activity. This adds value to the grains in the form of higher prices however also reduces the weight of the grains.

A third more interesting dynamic was the existence of contract (informal) farmers.

Local Maize Trader (*foria*): They are collectors of maize grains who engage in procuring maize from the farm household level generally and then resell to big traders. They often engage in drying maize grains before selling them forward. They sell the collected grains to two distinct types of buyers, namely: local crushers and large regional traders. Average capacity of such traders handing maize is around 12-20 tons per year.

Large regional traders (*beparis*): are traders who buy in-bulk from both the Local Maize Trader and then sell maize grain forward to feed mill supply agents (suppliers to national mills) and/or mills directly(regional). Average capacity of such traders handing maize is around 15-60 tons per year.

Feed Mill Supply Agents: Are suppliers to processors (national mills) who aggregate big volumes of maize grains from the big traders and then sell to processing firms. Average capacity of such agents handing maize is around 500-1,000 tons per year.

Local Crushers: They procure maize to crush and produce feed for livestock at the local levels. Average capacity of such traders handing maize is around 20-50 tons per year.

Regional feed mills: Are the buyers of maize grains who are located in the region such as Aftab Feed Mills who generally procure maize for production of feed (poultry, fish). The average capacity of such regional mills are about 10,000-15,000 tons per year.

Nation Feed Mills/Processors: Are the buyers of maize grains who generally procure maize for production of feed (poultry, fish,) includes companies like Nourish, Paragon, Quality feed, ACI Goldrej etc. The capacity of such large mills are about 20,000 – 50,000 tons per year.

Constraints and Market based solutions

Key Constraints		Market based solutions
1. Lack of knowledge on maize cultivation (a new crop) restricts many potential targeted farmers to adopt it	⟩	**1. Provision of knowledge on cultivation techniques**
2. Unavailability (and also timely delivery at retail point) of good quality seeds at remote *Haor* areas poses risks to the targeted farmers to crop loss/damage due to early rain/flooding	⟩	**2. Improve distribution channel of reputed agro-input companies**
3. Lack of knowledge of targeted farmers on different varieties (features of different seeds) results in crop loss/damage due to hailstorms, strong winds, etc.	⟩	**3. Provision of knowledge on seed varieties**
4. Lack of access to finance restricts targeted farmers to apply agro-inputs in appropriate time and quantity.	⟩	**4. Access to finance**
5. Poor forward linkages discourage many targeted farmers to start maize cultivation	⟩	**5. Access to markets**

After the identification of the key constraints – root causes corresponding market based solutions were identified. The above table summarises the constraints and observed during the field investigation in the *Haor* region for maize sector.

Prioritization of market based solution

Income Increase potential	High		4.	5. 3. 2. 1.
	Medium			
	Low			
		Low	Medium	High
	PEP Household engagement and potential			

After having pin pointed the probable market based solutions a prioritization exercise was undertaken using a simple 3*3 ranking grid. It was judged best to pursue all the potential market based solutions given the ranking. This was the case as the key root causes of the problem was looked at rather than the symptoms.

Assessment of Market based solutions and Facilitation activities

Key Constraints 1: Lack of knowledge on maize cultivation (a new crop) restricts many potential targeted farmers to adopt it
MBS: 1. **Provision of knowledge on cultivation techniques**
Proposed solution provider: **Argo-input Companies**
Challenges to service providers: - Lack of skilled personals in agriculture, - Cost of penetration into the *Haor* region is presumed to be very high, - Remoteness coupled with difficulty in reaching the areas discourages limits movement and service provision.
Incentives of service providers: - First mover advantage can establish loyal customer base, - Increased sales and thus increased profitability
Users of MBS (farmers)
Challenges for farmers: - Lack of interest and unaccustomed to attend trainings - Inability to pay fees for trainings (if fees are there) - Risk adverse behavior leads to deters adoption of new technologies - Opportunity cost of attending trainings in terms of labor days forgone.
Incentives for farmers: - Access to better production techniques knowledge - Better quality and higher yield of production - Higher incomes
Proposed facilitation activity: - Partner with interested reputed agri-input companies (Petrochem and Syngenta) to train retailers, arrange demonstrations, farmers field day etc. through a cost-sharing model. - Project may support PEP farmers to access knowledge and try maize cultivation through introducing 'voucher'[19] method for certain agri-inputs. The project provides 'vouchers' to prospective PEP members to acquire certain inputs. By showing the 'vouchers' to the trained retailers (by partner input companies) the farmers interested to cultivate maize can receive inputs.

Key Constraints 2: **Unavailability (and also timely delivery at retail point) of good quality seeds at remote *Haor* areas poses risks to the targeted farmers to crop loss/damage due to early rain/flooding**
MBS: 2. **Improve distribution channel of reputed agro-input companies**
Proposed solution provider: **Argo-input Companies**
Challenges to service providers: - Lack of distribution network limits penetration in the *Haor* region, - Unfamiliarity to the region discourages companies to engage in investments with distributors, - Lack of established markets increase time for return on investment,

[19] A method to encourage users to use certain product by partly or fully subsidizing the costs.

- Cost of penetration into the *Haor* region is presumed to be very high, - Remoteness coupled with difficulty in reaching the areas discourages limits supervision,
Incentives of service providers: - First mover advantage can establish loyal customer base, - Increased sales and thus increased profitability
Users of MBS (farmers)
Challenges for farmers: - Inability to purchase high quality inputs for its higher price - Commute to the dealers/resellers are difficult and time consuming
Incentives for farmers: - Better quality and higher yield of production - Higher incomes
Proposed facilitation activity: - Partner with interested reputed agri-input companies (Petrcochem and Syngenta) to strengthen their distribution channel in remote areas - Activities may include assisting partner companies to identify potential retailers in remote areas, train the new retailers on products. Facilitation activities to address Constraint 1 will also help create sufficient product demand for the companies to keep distributing their products to the new retailers under their distribution network.

Key Constraints 3. **Lack of knowledge of targeted farmers on different varieties (features of different seeds) results in crop loss/damage due to hailstorms, strong winds, etc.**
MBS: 3. **Provision of knowledge on seed varieties**
Proposed solution provider: **Seed Companies**
Challenges to service providers: - Lack of skilled personals in agriculture, - cost of penetration into the *Haor* region is presumed to be very high, - remoteness coupled with difficulty in reaching the areas discourages limits movement and service provision.
Incentives of service providers: - first mover advantage can establish loyal customer base, - increased sales and thus increased profitability
Users of MBS (farmers)
Challenges for farmers: - Lack of interest and unaccustomed to use unfamiliar brands - Risk adverse behavior leads to deters adoption of new varieties
Incentives for farmers: - Better quality and higher yield of production - Higher incomes
Proposed facilitation activity: - Partner with interested reputed maize seed companies (Petrochem and Syngenta) to promote seed varieties arrange demonstrations, farmers field day, etc. through a cost-sharing model to create awareness - Project may support PEP farmers to access seed varieties and try maize cultivation through introducing 'voucher' method for certain agri-inputs, i.e. to provide the first push into making enabling PEP members to adopt different varieties.

Key Constraints 4. **Lack of access to finance restricts targeted farmers to apply agro-inputs in appropriate time and quantity.**

MBS: 4. **Access to finance**
Proposed solution provider: **Argo-input sellers cum maize traders**
Challenges to service providers: - Finance is limited thus may reduce working capital for other business - Risk on nonpayment and/or breach of arrangement by farmers
Incentives of service providers: - Secure markets for inputs and easy access for output - Higher incomes
Users of MBS (farmers)
Challenges for farmers: - The risk of reduced prices in time of sales
Incentives for farmers: - Better quality and higher yield of production - Potential Higher incomes from yield
Proposed facilitation activity: - Identify and assist agri-input sellers cum maize trader to establish contract growing systems -

Key Constraints 5. **Poor forward linkages discourage many targeted farmers to start maize cultivation**
MBS: 5. **Access to markets**
Proposed solution provider: **Argo-commodity traders**
Challenges to service providers: - New markets are unfamiliar thus risky - Lack to linkage and knowledge on maize trading
Incentives of service providers: - New markets may lead to higher incomes
Users of MBS (farmers)
Challenges for farmers: - Specifications required by the traders may not be feasible
Incentives for farmers: - More buyers will lead to higher incomes from increased demand
Proposed facilitation activity: - Identify agro-commodity traders in remote areas interested in maize trading and link with larger wholesale market/mill agents - Identify mills (such as Aftab feed mills in Bhairab, Kishorganj) willing to source from the *Haor* region and link with appropriate trader and farmer base

Maize Value Chain – *Char* Perspectives

Maize productions in the chars are far more common compared to that of the *Haor* regions. Maize has expanded horizontally into these areas over the last decade. The sandy loamy soils and the agro-economic climate of the chars are highly suitable for maize production. Competing crops (such as pulses) are also less profitable. It also requires less irrigation comparted to that in rice.

Specific observation: In the *Char* regions unlike the *Haor* region informal contractual arrangements were missing. The volume of production and high presence of value chain actors both in the form of input sellers and traders creates a scenario which is more dynamic. Transactions are also thus based

on spot markets. Maize unlike the *Haor* region in *Char* regions is being cultivated in both Rabi and Kharif seasons.

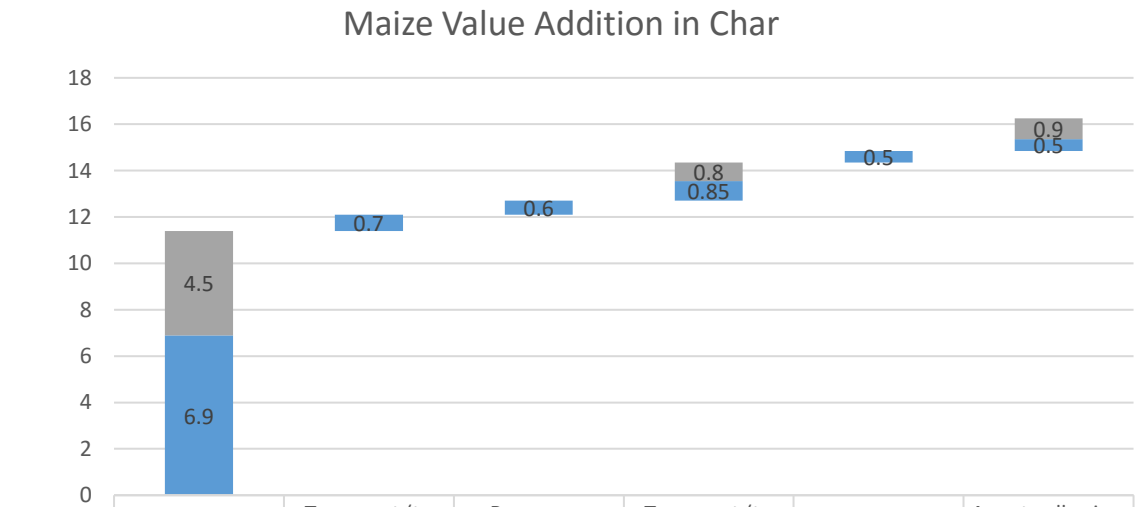
End Markets for Chars: The north region itself has large buyers/company agent as well as national and regional feed mills, thus maize not only reaches the feed mills in the region such as the ones Sirajganj, Rangpur but also goes in different other regions including south, south-west and south east region to buyers such as Paragon, Kazi feed, CP, PCF Feed etc.

Local Competitiveness in Chars: The region is highly competitive for maize production due to favourable agro-climatic conditions (prolonged winter, late rainfall, soil typology). It is one of the few areas where maize is also cultivated in many parts in Kharif 1 season. Quality of grains is well acceptable in the feed mills. However, some Chars areas are remote and thus incur additional transportation costs. It was observed from the study that the production cost is almost Tk. 7 with a margin of Tk. 4.5 at the farm level, similar to the *Haor* region. Smaller margins are observed at trader and mill agent levels.

Value addition in maize in Chars:

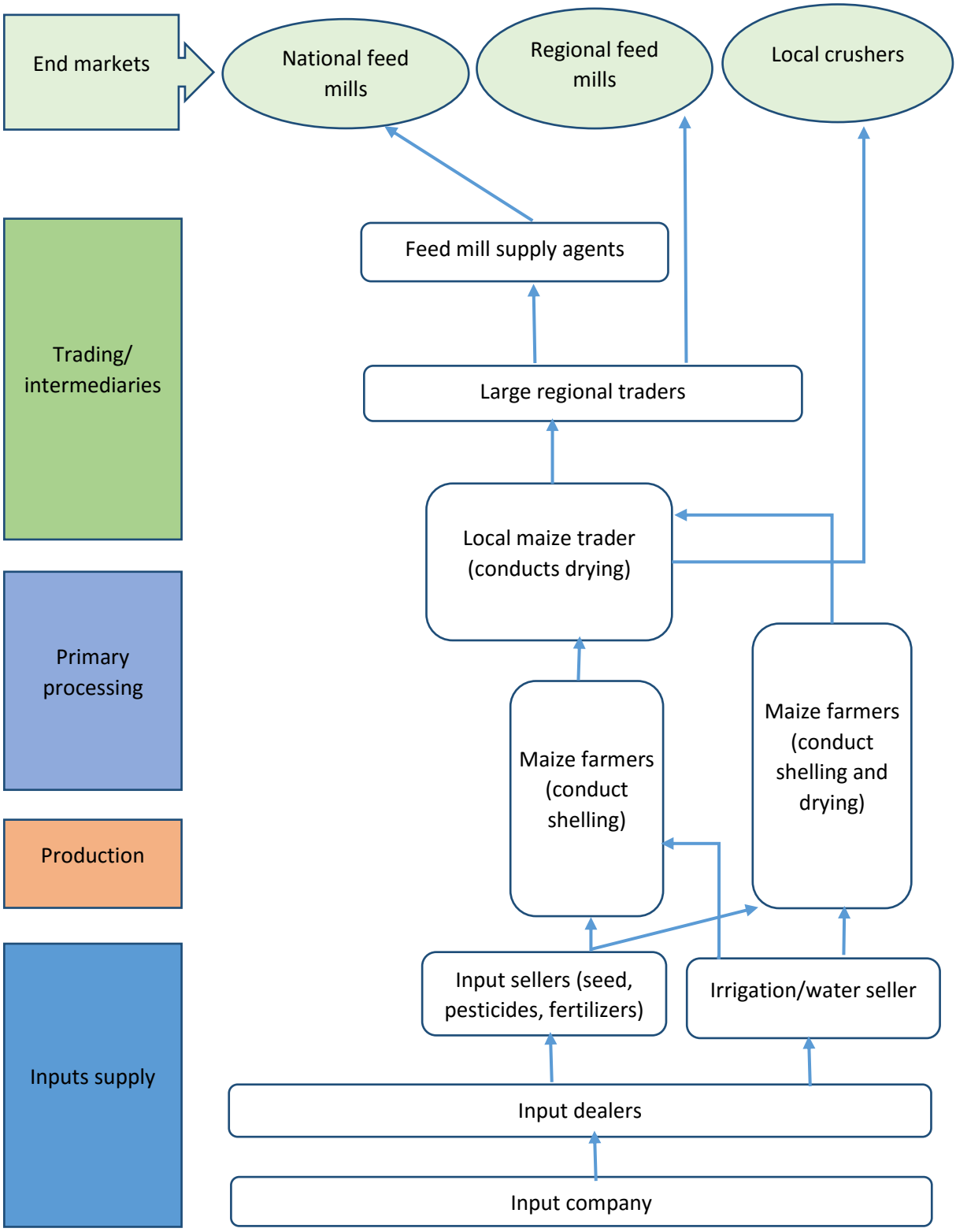
The following diagram shows the cost structure (and thereafter margin) at different levels of the value chain. As can be seen, farmers against a production cost of Tk. 6.9 per kg takes a margin of Tk. 4.5. The following costs e.g. transport to trader and drying (that includes margin also) are borne either by farmers or traders buying from farmers. To avoid incurring further costs, farmers in most cases tend to sell from farm-gate.

Figure 7: Value addition of maize in *Char* region



	Production	Transport (to trader)	Processng (drying)	Transport (to agent)	Arot Comission	Agent sell price margin
Margin	4.5			0.8		0.9
Costs	6.9	0.7	0.6	0.85	0.5	0.5
Total		11.4	12.1	12.7	14.35	14.85

Value Chain Map of Maize in *Char* Region



Description of Value Chain Actors

Input Company: Input companies are the firms engaged in supplying the inputs for production. Inputs includes seeds, fertiliser, pesticides etc. There was presence of several national level companies engaged in supplying these products. They play a critical role in the distribution and availability of products.

Input dealers: Are the first layer of distributors for the input companies. They generally buy in bulk amounts and then redistribute to input sellers. They also engage in selling to farmers near the shops.

Input sellers: Input sellers are resellers of the inputs at the farm level. They are the contact point for the farmers, and they also play a critical role in disseminating information to farmers about production technology.

Maize Farmers: Maize is grown by different farmers in the Chars (whether fall under PEP category or not). The target PEP farmers (having a maximum land size of 66 decimals either own or leased or combined) cultivate maize in part of their land. They also undertake shelling (removing the grains from the cob). Many farmers tend to sun-dry their harvested maize as much as they can (usually it takes 4-5 full sunny days to get the moisture level of the grains down at 14, which is most desirable by traders/processors). But as they do sun-dry, sufficient open and appropriate space is not always available and farmers have to sell wet or partly dried.

Irrigation water seller: Despite lower requirements for irrigation for maize cultivation, timely irrigation is critical. To irrigate the cultivable lands farmers generally purchase water from the water sellers, who provide the service of usage of the low-lift pump against different payment mechanisms.

Local Maize Trader (*foria*): They are collectors of maize grains who engage in procuring maize from the farm household level generally and then resell to big traders. They often engage in drying maize grains before selling them forward. They sell the collected grains to two distinct types of buyers, namely: local crushers and large regional traders.

Large regional traders (*beparis*): They are traders who buy in-bulk from both the Local Maize Trader and then sell maize grain forward to feed mill supply agents (suppliers to national mills) and/or mills directly(regional).

Feed Mill Supply Agents: Are suppliers to processors (National Mills) who aggregate big volumes of maize grains from the big traders and then sell to processing firms.

Local Crushers: They procure maize to crush and produce feed for livestock at the local levels.

Regional feed mills: Are the buyers of maize grains who are located in the region such as who generally procure maize for production of feed (poultry, fish).

Nation Feed Mills/Processors: Are the buyers of maize grains who generally procure maize for production of feed (poultry, fish) includes companies like Nourish, Paragon, Quality feed, ACI Goldrej etc.

Constraints and Market based solutions

Key Constraints	Market based solutions

1. Lack of knowledge of targeted farmers on production techniques hinders their potential to maximize yield	**1. Provision of knowledge on cultivation techniques**
2. Limited access to good quality seeds and other agro-inputs by targeted farmers due to physical remoteness affects the production and sectoral growth prospect	**2. Improve distribution channel of reputed agro-input companies**
3. Poor knowledge on harvesting and post-harvesting (shelling, drying) activities of farmers results in wastage and income-loss.	**3. Provision of knowledge on harvesting techniques and tools (net, tarpaulin etc.)**
4. Lack of access to adequate drying facilities to dry maize limit the income earning potential (and also damage crops) for targeted farmers	**4. Provision of drying facilities**
5. Lack of access to finance restricts targeted farmers to apply agro-inputs in appropriate time and quantity.	**5. Access to finance**
6. Physical remoteness restricts targeted farmers to access better paying markets	**6. Access to market**

After the identification of the key constraints – root causes corresponding market based solutions were identified. The above table summarises the constraints and observed during the field investigation in the *Char* region for maize sector.

Prioritization of market based solution

Income Increase potential	High		4.	1. 2.5.
	Medium			3.6.
	Low			
		Low	Medium	High
	PEP Household engagement and potential			

After having pin pointed the probable market based solutions a prioritization exercise was undertaken using a simple 3*3 ranking grid. It was judged best to pursue all the potential market based solutions given the ranking. This was the case as the key root causes of the problem was looked at rather than the symptoms alongside the ability and the initial phase of the project.

Assessment of Market based solutions and Facilitation activities

Key Constraints 1: Lack of knowledge of targeted farmers on production techniques hinders their potential to maximize yield
MBS: 1. **Provision of knowledge on cultivation techniques**
Proposed solution provider: **Argo-input Companies**
Challenges to service providers: - Lack of skilled personals in agriculture, - cost of penetration into the *Char* region is presumed to be very high, - remoteness coupled with difficulty in reaching the areas discourages limits movement and service provision.

Incentives of service providers: - first mover advantage can establish loyal customer base, - increased sales and thus increased profitability
Users of MBS (farmers)
Challenges for farmers: - Lack of interest and unaccustomed to attend trainings - Inability to pay fees for trainings (if fees are there) - Risk adverse behavior leads to deters adoption of new technologies - Opportunity cost of attending trainings in terms of labor days forgone.
Incentives for farmers: - Access to better production techniques knowledge - Better quality and higher yield of production - Higher incomes
Proposed facilitation activity: - Partner with reputed agri-input companies (Petrochem and Syngenta) to train retailers through a cost-sharing model - Project may support PEP farmers to access knowledge and try maize cultivation through introducing 'voucher' method for certain agri inputs to provide the first push into making the PEP members active participants of the market.

Key Constraints 2: **Limited access to good quality seeds and other agri-inputs by targeted farmers due to physical remoteness affects the production and sectoral growth prospect**
MBS: 2. **Improve distribution channel of reputed agri-input companies**
Proposed solution provider: **Argo-input Companies**
Challenges to service providers: - lack of distribution network limits penetration in the *Char* region, - unfamiliarity to the region discourages companies to engage in investments with distributors, - lack of established markets increase time for return on investment, - cost of penetration into the *Char* region is presumed to be very high, - remoteness coupled with difficulty in reaching the areas discourages limits supervision,
Incentives of service providers: - first mover advantage can establish loyal customer base, - increased sales and thus increased profitability
Users of MBS (farmers)
Challenges for farmers: - Inability to purchase high quality inputs for its higher price - Commute to the dealers/resellers are difficult and time consuming
Incentives for farmers: - Better quality and higher yield of production - Higher incomes
Proposed facilitation activity: - Partner with reputed agri-input companies to strengthen their distribution channel in remote areas - Activities may include dealer/retailer trainings, linkage meetings developing agents of inputs sellers

Key Constraints 3. **Poor knowledge on harvesting and post-harvesting (shelling, drying) activities of farmers results in wastage and income-loss.**
MBS: 3. **Provision of knowledge on harvesting techniques and tools (net, tarpaulin etc.)**
Proposed solution provider: **Maize Traders**
Challenges to service providers: - Funds and time required for provision of such facilities
Incentives of service providers: - Increased farmer base due to service provision - increased quality and thus increased profitability
Users of MBS (farmers)
Challenges for farmers: - Time and space required for post-harvest management
Incentives for farmers: - Better quality - Higher incomes
Proposed facilitation activity: - Scope and Partner with maize traders to demonstrate proper harvesting and post-harvesting practices to the PEP men, women and youth

Key Constraints 4. **Lack of access to adequate drying facilities to dry maize limit the income earning potential (and also damage crops) for targeted farmers**
MBS: 4. **Provision of drying facilities**
Proposed solution provider: **Individuals/entrepreneurs**
Challenges to service providers: - New business - Success rate of service provision
Incentives of service providers: - Higher incomes
Users of MBS (farmers)
Challenges for farmers: - Costs of availing such services
Incentives for farmers: - Better quality - Potential Higher incomes from selling dried grains
Proposed facilitation activity: - Identify and assist interested individuals to establish drying facility (*Chatal (cemented open space for sun-dry)* or mechanical dryer) - Promote alternative drying facilities such as net/polythene based drying successful in other areas by those materials sellers in the chars

Key Constraints 5. **Lack of access to finance restricts targeted farmers to apply agro-inputs in appropriate time and quantity.**
MBS: 5. **Access to finance**
Proposed solution provider: **Agri-input sellers cum maize trader**
Challenges to service providers: - Diversification of working capital - Risk of nonpayment by farmers due to crop failure and other issues - Risk of breach of contract
Incentives of service providers:

- Easily accessible farmer base for procurement and sales of inputs
Users of MBS (farmers)
Challenges for farmers: - Risk of lower price due to the contract farming arrangements
Incentives for farmers: - Greater access to finance allows for engaging in cultivation of maize
Proposed facilitation activity: - Identify and assist agri-input sellers cum maize trader to establish contract growing system

Key Constraints 6. **Physical remoteness restricts targeted farmers to access better paying markets**
MBS: 6. **Access to market**
Proposed solution provider: **Agro – commodity traders**
Challenges to service providers: - Diversification of working capital - New markets with unfamiliar dynamics
Incentives of service providers: - Easily accessible farmer base from previous connections - Economies of scale from potential synchronization of transport
Users of MBS (farmers)
Challenges for farmers: - Risk of lower price due to service provision
Incentives for farmers: - Greater access to markets allows for engaging in cultivation of maize as well tapping into higher price markets
Proposed facilitation activity: - Identify agro-commodity traders in remote areas interested in maize trading and link with larger wholesale market

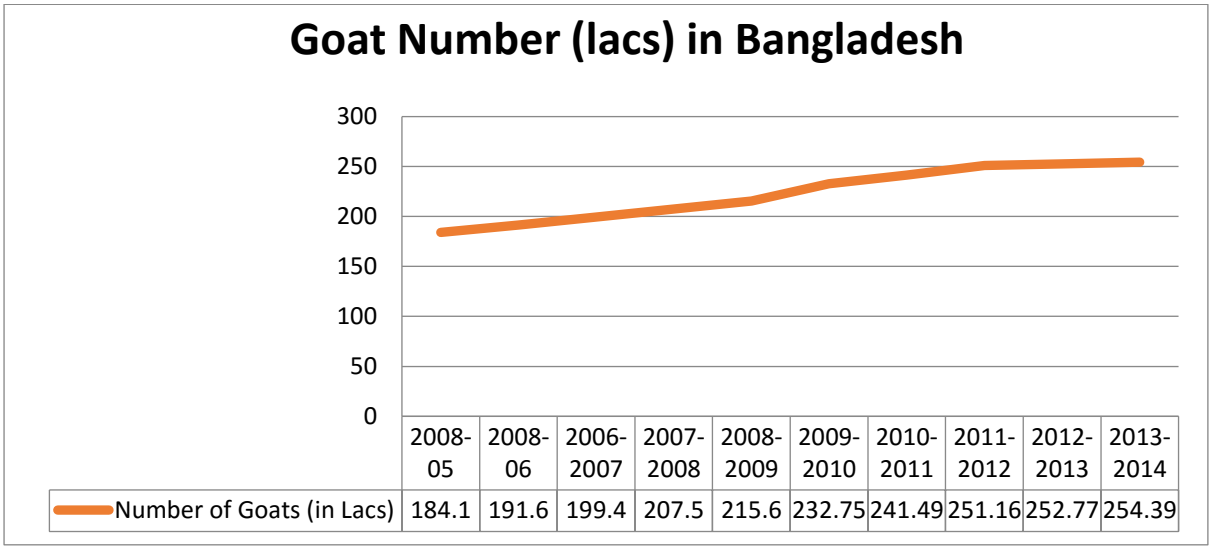
Goat Value Chain Country and *Char* Perspective

Goat numbers in Bangladesh has been increasing over the years estimated to be at 25.44 million[20] . More than 98% of goats are owned by the small, marginal and landless farmers in the villages. Women and teenagers employ their labor in goat rearing as a subsidiary occupation. Because many of the farmers are essentially landless, goats in Bangladesh mainly live on collected road side grasses, tree leaves and kitchen vegetable wastes. Herd size ranges from 2 to 8. Male kids are castrated at early age, fattened and then marketed between 1 and 2 years of age.[21] 63% of the households in rural Bangladesh rear goats where the herd size varies from 2 to 8. [22] There are three major breeds of goat - the Black Bengal Goat, Jamunapari and cross breeds. The Black Bengal is the more common species and is generally preferred by goat farmers and consumers alike. Goat are highly susceptible to diseases PESTE DES PETITS RUMINANTS- PPR is a highly contagious viral disease of goats, with symptoms of fever, erosive stomatitis, enteritis, pneumonia, and death. This is the leading causes of deaths amongst

[20] Department of Livestock Services, 2015
[21] http://www-naweb.iaea.org/nafa/aph/stories/2006-black-bengal.html
[22] Heifer International, 2015

goats causing a mortality of nearly 45%.[23]. The field findings also supported this - one in every two goats died because of this disease. It was also observed that households were unaware of the disease and did not engage in getting vaccines. PPR vaccines are primarily provided by the government by its Department of Livestock Services (DLS) offices. The DLS services are limited mainly within the mainland due to their human resource constraints. There are no such private sector actors marketing this vaccine primarily due to the government involvement.

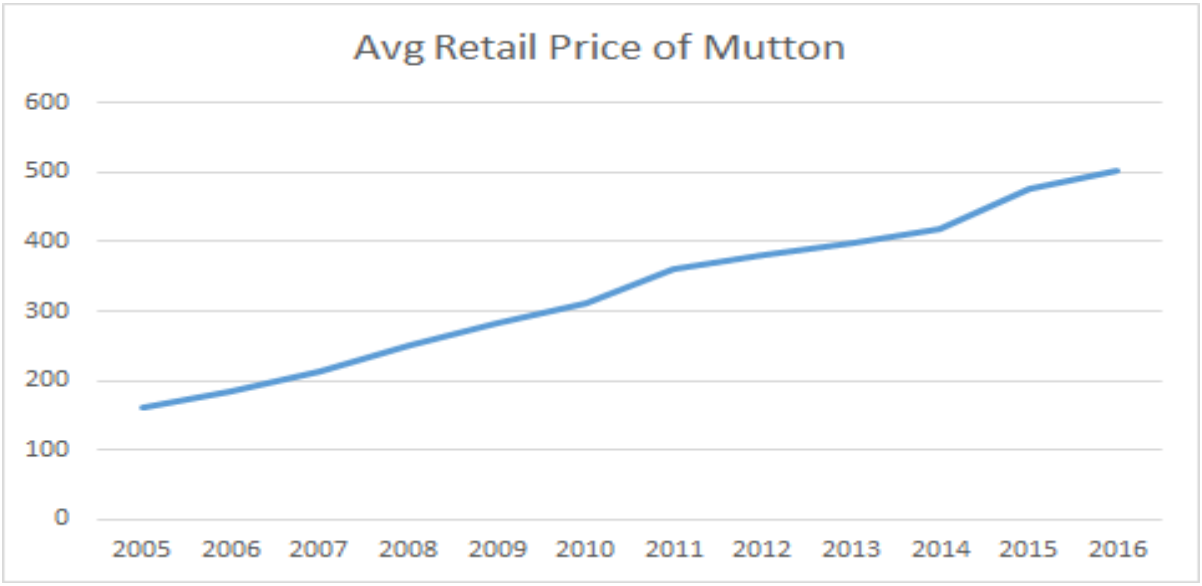
Figure 8: Growth trend of goats in Bangladesh



	2008-05	2008-06	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014
Number of Goats (in Lacs)	184.1	191.6	199.4	207.5	215.6	232.75	241.49	251.16	252.77	254.39

The prices of mutton (goat meat) also showed incredible increase over the last decade; the prices above reflect data from Department of Agriculture Marketing (DAM), Government of Bangladesh (GoB).. It can be observed that the price has increased nearly 4-fold over the last decade.

Figure 9: Growth trend of goat meat price in Bangladesh



[23] Heifer International, 2015

Specific Observations It was observed that mostly the female household members are engaged in goat rearing and each household ends up owning 3-4 goats at any point of time. Goats are generally sold from the households to small traders who collect the goats from village level. When at household level, often female family members make the transaction with the trader. However, husbands or male counterparts who usually visit markets have knowledge about market rate and thereby inform their female counterparts about the probable selling price beforehand. Selling from household is common to avoid the hassle of transporting goats to nearby market and it also saves time and extra costs of transport and market toll. High demand for goats is resulted into good price offered at farm level also. However, occasionally farmers also take them to the market. Generally, female has a stronger voice over the income from selling goats for two reasons – they mainly take care of them and goats rearing are considered as secondary or tertiary income of the family while men have more control over the primary income option.

At PEP household level, it was observed that good rearing practices were mostly absent. Many of the households rarely vaccinate their goats against PPR. Furthermore, improved technologies such as raised housing to reduce risk to diseases from urine was not known at all. The presence of service providers in the form of paravets and doctors was also limited especially for the remote *Char* dwellers as transportation costs for the service providers are high. Similarly, the presence of DLS officers was also very limited because the DLS is understaffed..

PEP households find it difficult to acquire insemination services also - be it natural and/or artificial. It was found during the field investigation stage that the number of natural insemination service providers is declining as male goats (*pathas*) are usually hard to keep due to the odour that these goats (*pathas*) disperse Interestingly it was also found out that BRAC AI Services is in the market providing insemination services for goats, though the popularity and spread are limited. This opens up scope for improved conception rates.

Goats are generally procured from the age of 6 months to 1 year, and goats are matured enough to conceive from the age of 1 year. Goats give birth to young twice per year, and usually bear one to two kids. Mortality rates among the young tend to be high as well, sometimes as high as 50%. Thus, improved breeding and conception and better disease management practices hold potential of increasing incomes at farm level. PEP households incurs up to BDT 200 for natural insemination services.

Local Competitiveness Goat production in the *Char* areas is a very profitable undertaking. Goats in many ways act as insurance. Many families engaged in goat-rearing look at it as an activity that can generate income in times of need. Traditionally goat rearing in the *Char* areas has had a competitive edge as natural feed - in the form of grazing fields- are commonly available. Selling goats is also very easy as the small traders generally buy goats from the households. There is no time limit during the year for goats to be bought and sold. Goats enjoy a relatively yearlong demand. However, goat demand falls a little during the rainy season due to the availably of fish in the general market. Also many households sell their goats before the rainy season starts as grazing lands are flooded during rainy season. . A similar situation occurs during the winter season, but it is primarily due to the fact that goats tend to be more prone to disease attack during this season. Although PPR is the most prevalent disease, Pneumonia and Icthima are also common.[24] These factors thus lead to a boost in supply in the market for goats from the PEP households, as they act as a precautionary measure to

[24] Heifer International, 2015

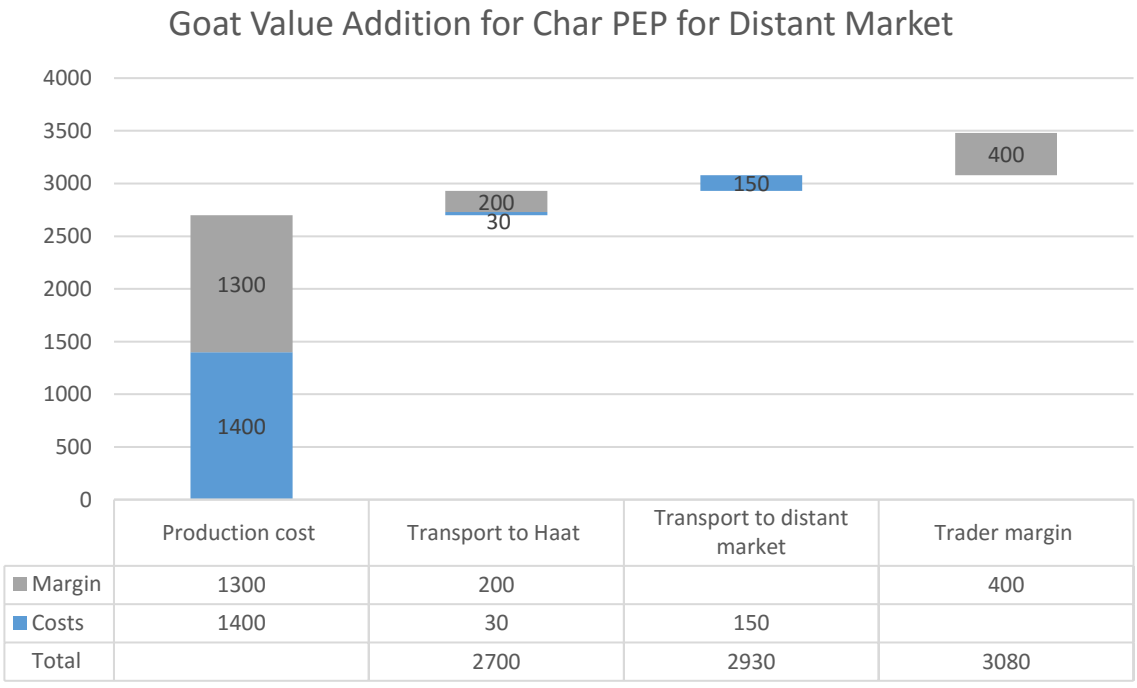
avoid potential loses. Similarly, during the religious festivals of EID and Puja the demand for goat's increase causing a spike in the prices as well.

End markets Small traders generally procure directly from the farm households; they then sell forward to bigger traders who also sometimes procure from the households. Their main function, however, mainly lies in collecting and reselling to distant markets. Depending on the area of business, different modes of transport such as boats, buses and small vans are used to transport goats to end markets e.g. Bogra, Tangail, Dhaka and other areas as well.

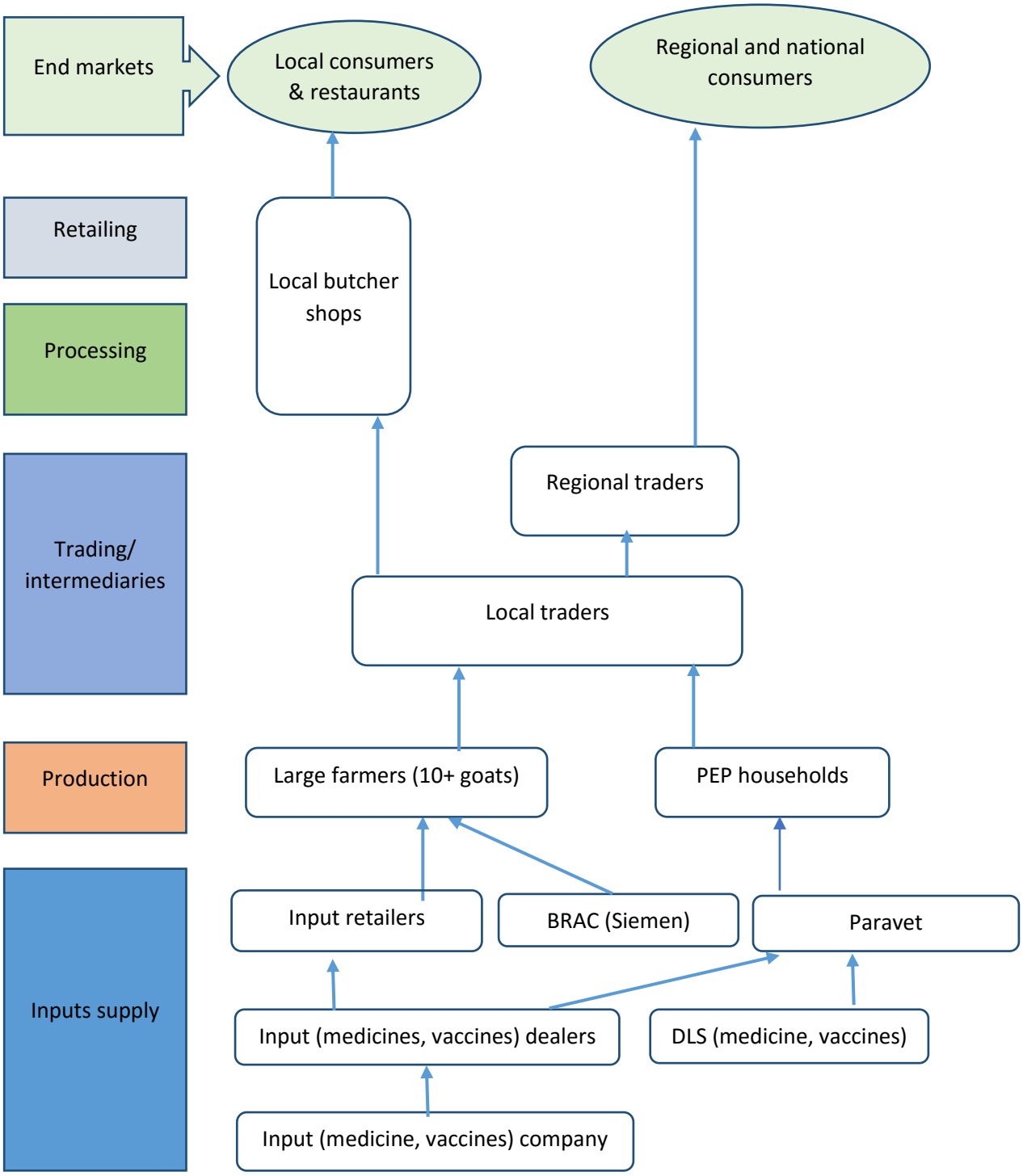
Butchers (slaughter houses) comprise the major market segment for goats. Butchers generally purchase goats to be further processed and broken down into smaller units for sale to end consumers. The demand at the district level has increased significantly over the years. Instances of butchers procuring 5-6 goats per day were observed currently, whereas it used to be 1-2 per day 5 years ago. Though the average retail prices of mutton (goat meat) has increased four times over the last decade showing a soaring demand for goat meats.
An interesting observation was the use of buses to transport goats to distant markets where the carriage in the buses for luggage is transformed into spaces for transporting goats. No such established companies are presently there in the market except for Bengal Meat.

Value addition in goats:
The study revealed that the margin at the household level is relatively high, and that this amount decreases in the downstream. It is understood as the traders usually trade in numbers and almost every day while farmers may sell once or twice in a year. It is also important to note that when goats are traded as an animal, its market value includes both meats and the skin. Usually, skins are separated at the slaughter/butcher houses and traded through a different channel towards the tanners.

Figure 10: Value addition of goats at different tiers



Value Chain Map of Goat in the *Char* regions



Description of Value chain actors

Input Company: Are suppliers of medicine and feed and even vaccines (though vaccine market is primarily dominated by the government services) who sell their products through the input dealers and retailers. Major players in the market include ACI, ACME, Renata, etc.

Input Dealers: Dealers are sellers of Inputs such as feed and medicine who have fixed locations from where other retailers and a few household members engage in buying the products.

Input Retailers: Are retailers of feed and medicine, who sell medicine and/or feed to goat farmers. They rarely engage in providing information to farmers.

BRAC: BRAC AI Services is providing artificial insemination services to goat farmers, although the service is relatively no that popular known.

Paravets and Doctors are village level service providers who engage in providing veterinary services to goats and other livestock in terms of giving prescriptions for medicine, based on the status of the animal. They also engage in providing insemination services sometimes. These service providers live in and also travel to other chars to provide services. However, still availability of such services in remote areas is not frequent as the paravets tend to sell their services more in mainland or connected islands where commuting is easier.

Department of Livestock: Government department engaged in providing technical knowhow and other services such as artificial insemination, prescriptions, etc. In *Char* areas their presence is quite low due to constrained resources and remoteness of the area.

Large farmer: engage in rearing goats at a large number and also sometimes engage in providing natural insemination services.

PEP Household (Small Producers): They are primarily the females of the households who engage in rearing goats.

Local Traders (Foria): Small traders locally known as '*forias*', are the first level of collectors. They generally collect goats and take them to the nearby weekly markets (Haat) to resell. These men are usually present at the village level and procure from household levels.

Regional Traders (Beparis): Big Traders locally also known as 'Beparis' procure in bulk from the markets (*haat*) and sell to distant markets such as Rangpur, Bogra, Tangail, Mymensigh, Chitagong, Dhaka etc.

Local Butcher Shops (Koshai): They are local level butchers who buy goats from the markets in order to process in terms of slaughter and sell to local consumers and local institutions such as restaurants.

Local Consumers and Restaurants: Are the general households and restaurants who engage in buying Mutton (goat meat).

Regional and National Consumers: Are distant buyers who engage in buying goats to resell in regional and national markets.

Constraints and Market based solutions

Key Constraints	Market based solutions
1. Lack of knowledge of targeted households on rearing practices (diseases, feeding etc) results in animal loss or poor income	**1. Provision of knowledge on improved goat rearing practices**
2. Limited knowledge of targeted households on different species of goats limits the income increase potential	**2. Provision of knowledge of goat varieties**
3. Lack of access to breeding service limits PEPs' provision to maximize income	**3. Provision of buck or AI services**
4. Limited access to markets by targeted households in certain seasons (rainy season, due to flooding) results in animal loss or forced selling	**4. Access to market**

After the identification of the key constraints – root causes corresponding market based solutions were identified. The above table summarises the constraints and observed during the field investigation in the *Char* region for maize sector.

Prioritization of market based solution

Income Increase potential	High		3.	1.2.
	Medium			4.
	Low			
		Low	Medium	High
	PEP Household engagement and potential			

After having pin pointed the probable market based solutions a prioritization exercise was undertaken using a simple 3*3 ranking grid. It was judged best to pursue all the potential market based solutions given the ranking. This was the case as the key root causes of the problem was looked at rather than the symptoms alongside the ability and the initial phase of the project.

Assessment of Market based solutions and Facilitation activities

Key Constraints 1: **Lack of knowledge of targeted households on rearing practices (diseases, feeding, etc.) results in animal loss or poor income**
MBS: 1. **Provision of knowledge on improved goat rearing practices**
Proposed solution provider: Input Companies
Challenges to service providers: - Cost of provision of service - Lack of adequate personals
Incentives of service providers: - Potential markets - Increased sales - Higher Profits
Users of MBS (farmers)
Challenges for farmers: - Access to knowledge and the service due to social aspects of females not leaving households in general
Incentives for farmers: - Lower mortality rates of goats reared

- Increased production - Higher profits
Proposed facilitation activity: - Partner with interested reputed private veterinary companies **(ACI and Chemist)** to train retailers/paravets through a cost-sharing model targeting the *Char* region

Key Constraints 2: **Limited knowledge of targeted households on different species of goats limits the income increase potential**
MBS: 2. **Provision of knowledge goat varieties**
Proposed solution provider: **Large Traders**
Challenges to service providers: - Limited knowledge and access to better species of goats
Incentives of service providers: - Better species will fetch better prices - Increased profits
Users of MBS (farmers)
Challenges for farmers: - Inability to differentiate between species - Cost of buying goats of different species - Access to better species despite awareness
Incentives for farmers: - Better quality and higher yield of production - Higher incomes
Proposed facilitation activity: - Assist large traders to arrange meetings with PEP HHs to share goat varieties and market trend

Key Constraints 3. **Lack of access to breeding service limits PEPs' provision to maximize income.**
MBS: 3. **Provision of buck or AI services**
Proposed solution provider: **Business men(individuals) , BRAC and DLS**
Challenges to service providers: - Limited markets initially - Lack of awareness about the product/service
Incentives of service providers: - Increased farmer/customer base due to service provision - increased profitability
Users of MBS (farmers)
Challenges for farmers: - quality assurance for the service/product - cost of service/product
Incentives for farmers: - Better quality - Higher incomes
Proposed facilitation activity: - Identify individuals to invest and operate buck services and share risks by partial cost-share - Partner with BRAC/promote through DLS on AI services -

Key Constraints 4. **Limited access to markets by targeted households in certain seasons (rainy season, due to flooding) results in animal loss or forced selling**
MBS: 4. **Access to market**
Proposed solution provider: **Business men**
Challenges to service providers: - Opportunity cost and financial cost of travelling to areas - New markets take time to build familiarity amongst suppliers
Incentives of service providers: - Higher incomes through increased trade volume
Users of MBS (farmers)
Challenges for farmers: - Potential lower prices for sale of goat
Incentives for farmers: - Easier access - Lower cost of sales
Proposed facilitation activity: - Arrange series of linkage workshops with large traders to attract to visit and procure goats from PEP HHs in numbers.

Bamboo Craft (fish trap-*Chai*) Value Chain *Haor* Perspective

Fishing is the second largest source of income in the *Haor* regions. However,PEP households are only able to fish in certain time frames of the year i.e. June through October. However, fish capture in *Haor* areas is a common livelihood option. While there are different equipment and tools to capture fish, *Chai,* a specific type of tool has its own merits. It is made locally where bamboo is the key raw material, small in size, has varieties for different water level and to capture different types of fishes, used in numbers and therefore affordable by even the poorest households as they can buy number of pieces as they can afford. At least 11 different types of *Chais* were identified as shown in the table below:

Table 8: Different types of *Chais* and their salient features

Type of *Chai*	Type of fish suitable to capture with	Depth of water level used at (feet)	Districts mostly used	Retail price range (BDT/piece)
Khurchonga	Small shrimp	9-10	Sunamganj	50
Gol *Chai*	Tangra	1.5	Sunamganj	220-250
Lomba *Chai*/tangailla *Chai*	Small fishes (small shrimp, tangra, gutum, batashi)	1.5-4.5	Netrokona, Sunamganj	150-200

Kuicha *Chai*/chonga *Chai*	Kuicha	1.5 – 7.5	Habiganj	40-50
Kudi *Chai*	Small fishes (small shrimp, tangra, gutum, batashi)	7-8	Habiganj	150-200
Ak ghaia lok *Chai*	Small fishes (tangra, puti)	1.5-3	Habiganj	150-200
Dui ghaia lok *Chai*	Small to big fishes (taki, bain, shol, gojar)	3-6	Habiganj	200-300
Chang *Chai*	Small shrimp	6-8	Netrokona	40-50
Gol *Chai* (different type)	Big shrimp	6-10	Kishorganj, Netrokona	100-120
Bang *Chai*	Small fishes (tangra, puti)	1.5-3	Sunamganj	120-150
Koiar duri *Chai*	Big fishes (shol, gojar, boal, aire)	9-12	Habiganj	400-500

Because of the simplicity of using *Chai* most of the households, irrespective of poor and non-poor economic status buy it in numbers – whether for household consumption or selling in the market of the captured fish. A conservative estimate would be such that at least 60-70% households buy at least a few *Chais* in season while the households usually buy them in 10s and 100s. The application of this tool is such that someone has to place them in specific water level and pull them out every 3-4 days, retrieve the captured fish and put the *Chais* back in the same place. Therefore, this type of fishing does not require much time-engagement. Since, fish are captured at low water level, even young boys of the household can use them. Because of all these benefits of this tool, the demand for this Chai is increasing every year. Besides, *Chais* last only one year (actually one fishing season) and therefore, are bought repeatedly every year. The demand of specific type of *Chai* varies by districts and water level as shown in the table above. However, in general, the regional topography is similar and therefore, type/s of *Chais* are used based on the location of the user near the water body (water depth and fish availability).

Specific observation

Chai is produced at village and at homestead level by using simple cutting and edging tools. However, it requires specific skillsets (similar to handicrafts). While men purchase the raw materials (bamboo, threads etc.) from the market and do the initial hard work of bamboo cutting and shaping, women family members (both adult and young) join them to make the finished goods. Because of the specific skillsets, not so many households are engaged in making them. Since the market is largely informal, the transfer of skills is mainly on-the-job training where a wage labourer learned the skills while working with a *Chai* maker. Since in most cases all the family members get engaged in *Chai* making, not so many households deploy external labourer and therefore, the skill transfer is limited.

While some villages have appeared as *Chai* making clusters (40-50 households making *Chais*), some other villages have 1-2 households who make them and many do not have any *Chai*-maker. As *Chai* is used by most households in the region, in many occasions individual *Chai*-makers are invited by villages to produce *Chai* for them just before the beginning of the fishing season. The profitability of *Chai* making is very high as the main cost is the labour. It was estimated that a person can make 2-3

Chais (by working 10 hours) per day worth Tk. 100 each where the production cost (raw materials) is only around Tk. 25 for each. Hence, the producer receives mostly the fees for his/her labour.

This is due to the fact that the demand for *Chai* reaches its peak in April-May when the water starts rising and gradually diminishes from July-August. To maximize the utility of each Chai bought, everyone wants to buy at the beginning of the rainy season. To attend to this surge in demand, *Chai* producers are required to have a large stock ready. But due to lack of working capital to buy raw materials, their ready stock is always limited. On the other hand, wholesalers of *Chais* pre-finance the *Chai*-makers to make *Chai* for them during the lean period and the rate per piece given is simply the half of the peak season. Good cases show that *Chai* makers who have access to required working capital prepare semi-finished goods during the lean period. Before the season begins, the remaining small parts are made and all assembled together to prepare for the market. In *Haor* region, there is little or no work in the agricultural field during May- October. Promotion of Chai among the poor households can provide homestead based job opportunity during this period where women (both adults and young) can engage themselves.

Chai wholesale and retail shops are available in all Upazila level markets and also in some cases Union level ones. During peak season (April-May), even the village level grocery stores sell *Chais*. At every level of the value chain there is a clear indication of increased sales year on year. Pre-financing by wholesalers are also an indication of high unmet demand and the efforts by them to secure their supply. At retail ends, they refer to come out of supply and ready to receive as much as could be delivered. At producer end, production number is increasing every year. Since there is scope to sell directly to consumers at retail price. Since this is a strong seasonal product, only large ready-stock ready can fetch higher income which the poor households cannot afford due to lack of working capital. Available financing options (local money lenders) are costly for them, though some opt for them without having better options or take pre-finance from wholesalers.

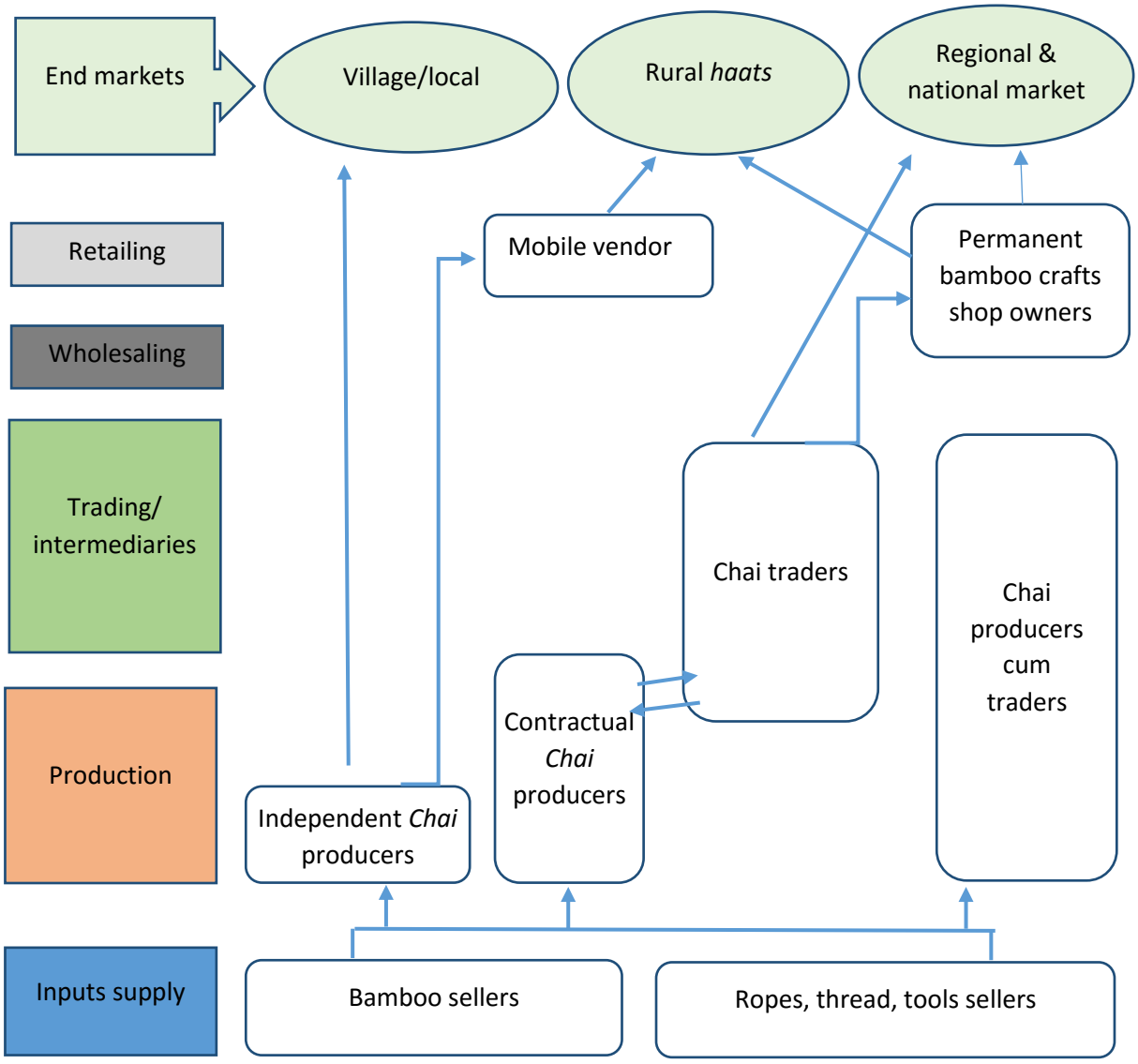
Local Competitiveness

In Netrokona, Habiganj, Kishorganj, Sunamganj in all districts there are local *Chai* producers but are limited in number and in specific clusters and sell locally. Chai is transported as finished products and transporting is costly as it occupies space. Consequently, mobility of most *Chai* is limited within short distances. Chai used to be imported from other areas (such as Tangail) before and those *Chais* are now produced locally. Now, hardly any *Chai* come from outside the region, rather they are exported to other regions. Bamboo is the main raw material for *Chai* and constitutes more than 80% of the production cost (excluding labour). Although bamboo is not widely grown, availability at competitive prices is not an issue.

End markets

As mentioned earlier, *Chais* are difficult to transport. Nonetheless, demand ranges from within the same village to other districts and even beyond the region. Producers are sometimes also taken to other villages (in other Upazilas also) to make Chai. Chai has demand beyond the region; for example, Kuicha *Chai* goes to Noakhali, Laksham, Bhola, Barisal districts also.

Value Chain Map of Chai in the *Haor* regions



Description of Value chain actors

Bamboo sellers: Bamboo Sellers are actors who sell bamboo at the local market level (*haats*). These bamboos are used for several purposes, one of which is as a raw material for fishnets (*Chai*). They generally procure bamboo from traders of the surrounding region.

Ropes, thread and Tool sellers: They are hardware retailers in the local markets (*haats*) who sell ropes, thread and other tools used for crafting fishnets (Chai).

Chai Producers (fishnet producers): Generally, these are household members who engage in producing/ crafting the fishnets (*Chai*). They also engage in direct selling, to *forias* and nearby markets. Some even work on a contractual basis on orders received from traders.

Chai Traders (fishnet traders): Generally, purchase (even pre order) to mall artisans and sell the product to consumers directly and well as to consumers in other areas.

Mobile Vendors: Are small traders who collect fishnet from the producer level and sell to rural nearby markets (*haats*).

Permanent bamboo crafts shop owners (wholesalers and retailers): They run shops which sell bamboo crafts inclusive of fishnet (*Chai*) in the local areas.

Local Consumers: Are generally fishermen who procure the fishnets (*Chais*) for capturing fish.

Regional Consumers: Are distant fishermen and traders who procures the fishnets (*Chais*) for own usage and reselling respectively.

Constraints and Market based solutions

Key Constraints	Market based solutions
1. Absence of skills restrict many households to make *Chai* though there is high demand and abundance of unused labour	**1. Provision of training on *Chai* making**
2. Lack of knowledge of semi-finished products restricts transportation of *Chai* in large scale though there is demand across the region	**2. Provision of assembly services**
3. Lack of working capital of *Chai* producers limit income increase potential	**3. Access to appropriate financial products**
4. Poor linkages (business relationship) between wholesalers/large buyers and producers restricts the growth of *Chai* production	**4. Provision of linkage with large buyers**
5. Lack of knowledge of producers on different types/varieties of *Chai* restricts them to tap wider market opportunity.	**5. Provision of knowledge of different *Chai* varieties and their markets**

After the identification of the key constraints – root causes corresponding market based solutions were identified. The above table summarises the constraints and observed during the field investigation in the *Char* region for maize sector.

Prioritization of market based solution

Income Increase potential	High			1.2.3.4.5
	Medium			
	Low			
		Low	Medium	High
	PEP Household engagement and potential			

After having pin pointed the probable market based solutions a prioritization exercise was undertaken using a simple 3*3 ranking grid. It was judged best to pursue all the potential market based solutions given the ranking. This was the case as the key root causes of the problem was looked at rather than the symptoms alongside the uniqueness of the product.

Assessment of Market based solutions and Facilitation activities

Key Constraints 1: Absence of skills restrict many households to make *Chai* though there is high demand and abundance of unused labor
MBS: 1. **Provision of training on *Chai* making**
Proposed solution provider: **Large Chai Producers**
Challenges to service providers: - Networking with relevant households - Cost of labour
Incentives of service providers: - Increased production - Higher Profits
Users of MBS (producers)
Challenges for producers: - Ability to work under guidance and deadlines
Incentives for producers: - Wage earnings
Proposed facilitation activity: - Partner with and assist large *Chai* producers to hire interested PEP workers (willing to learn) as on-the-job training and share partial wages. Project may share labor cost/wages with the large producer.

Key Constraints 2: **Lack of knowledge of semi-finished products restricts transportation of *Chai* in large scale though there is demand across the region**
MBS: 2. **Provision of assemble services**
Proposed solution provider: **Chai producers**
Challenges to service providers: - Division of task may be difficult as it may be a new area of work - Wage for the assemblers may be financially burdensome
Incentives of service providers: - Greater production of transferable products to new markets - Increased sales - Wider market - Increased incomes
Users of MBS (producers)
Challenges for producers: - Learning the skill
Incentives for producers: - Earnings from the assembling
Proposed facilitation activity: - Develop *Chai* assemblers through providing training by experience Chai producers.

Key Constraints 3: **Lack of working capital of *Chai* producers limit income increase potential**
MBS: 3. **Access to appropriate financial products**
Proposed solution provider: **MFIs**
Challenges to service providers: - Lack of appropriate financial packages

- Risk of default
Incentives of service providers: - Wider consumer base
Users of MBS (producers)
Challenges for producers: - May lead to increased household debt
Incentives for producers: - Increased production - Increased profit
Proposed facilitation activity: - Negotiate with and assist MFIs to develop seasonal loan products appropriate for Chai producers to address 'lack of appropriate financial products'. Project may share the risk of MFIs to introduce this new loan product. While negotiation between the project and the partner MFI/s will delineate all the clauses, the key aspect is such that the project will pay the MFI/s the gap amount between regular interest and subsided interest for a certain time period while the PEP borrower will pay the subsidised interest plus principal amount. Within the agreed time frame, once significant number of borrowers start borrowing money and the partner MFIs sees the scale, the project will withdraw the support and MFIs will gradually start implementing market interest rate.

Key Constraints 4: **Poor linkages (business relationship) between wholesalers/large buyers and producers restricts the growth of *Chai* production**
MBS: 4. **Provision of linkage with large buyers**
Proposed solution provider: **Large Chai buyers**
Challenges to service providers: - Networking with relevant households - Cost of linkage activities
Incentives of service providers: - Increased sources - Increased volumes - Higher Profits
Users of MBS (producers)
Challenges for producers: - Maintaining linkage with buyer - Meeting buyer requirements
Incentives for producers: - Increase Markets - Increased production and thus sales - Increased profits
Proposed facilitation activity: - Arrange series of linkage workshops between large buyers and newly promoted *Chai* production clusters. Project may support the *Chai* producers indirectly for each piece sold to the large buyer. This indirect support may take the form where the new production cluster offers a slightly reduced market rate to large buyers for a season only and the project pays the gap to *Chai* producers. This is to attract the large buyers to come to the new production clusters otherwise they would not come and so that newly trained producers do not lose interest for not being able to sell their products in large quantity. -

Key Constraints:5. **Lack of knowledge of producers on different types/varieties of *Chai* restricts them to tap wider market opportunity.**
MBS: 5. **Provision of knowledge of different *Chai* varieties and their markets**
Proposed solution provider: **Large Chai Producers/Buyers**
Challenges to service providers: - Networking with relevant suppliers/buyers - Cost of linkage (travel)
Incentives of service providers: - Increased sources/markets - Higher Profits
Users of MBS (producers)
Challenges for producers: - Ability to meet requirements
Incentives for producers: - Increased markets - Increased earnings
Proposed facilitation activity: - Arrange series of regional workshops to demonstrate varieties of Chai to share and demonstrate techniques. Project may arrange fair to attract large buyers from other districts.

Additional opportunities and insights

WISH POND

The scope of the study allowed to identify and analyse four highest potential value chains (two for each region) appropriate for the PEP households. The study identified a few more prospective value chains for detail assessment by the PDT at a later stage. However, commercial engagement in the selected value chains of the target population is as important as ensuring their food security and diverse nutrition intake. The selected and analysed on-farm value chains are not likely to provide a wide range of nutrition intake opportunity if partial self-consumption takes place. Though the idea of promoting and engaging PEP households in most prospective value chains is such that they would have higher income and spend additional income to buy diversified nutritional food intake, exploring opportunities to allow them to produce nutritional food by themselves is worth considering. WorldFish has developed a technology where households who do not have ponds can culture fish in an artificially created pond and also cultivate vegetables around the pond if there is little homestead area to establish the pond. WorldFish experimented the technology in the southern part of Bangladesh. The technology is called WISH (water and fish). The results are promising – fish and vegetables have been produced for regular household consumption and at the same time, the communities' resilience against the medium scale flooding and salinity intrusion have been enhanced. On average, in each WISH pond, a farmer could harvest 145 kg of fish and 160 kg of vegetables. In the trials, the total investment for each WISH pond was USD 170 and the annual profit against the investment was USD 130. The pond can be dismantled in need of time also. Considering

the flood and inundation in both the targeted regions of SHOUHARDO III, this is an important requirement. Therefore, the project may consider promoting low-cost WISH pond technology where feasible to ensure food security in parallel to promoting promising value chains. The project can assist PEP HHs to establish WISH ponds in both *Chars* and *Haors* where appropriate and feasible through cost-sharing.

Creating job during lean period: off-farm VCs and vocational skills

Project's strategy to promote promising off-farm value chains alongside on-farm ones is very appropriate considering the low-cropping intensity in the targeted regions resulting in no or little work in the field during certain time period of the year. The consequence is also visible as seasonal migration is commonplace from both the regions. Besides, study shows that most off-farm value chains in rural areas engage household members at production or processing level where women engagement is generally high. However, during the study period though a number of off-farm value chains were identified but their scale, growth potential and the project's scope to intervene were found low. For example, bamboo crafts are widely used in rural areas but in recent years many products have been replaced by plastic products, the market is highly informal, and production is very much clustered and carried out by a specific ethnic group and there is social stigma as a barrier for other people to take this as an occupation. Pottery has a similar picture where scale is very limited, only a few cluster is engaged and by again specific ethnic group and the market does not show a positive growth indication. Other products identified include caps, paper products, *Jhuri* (snacks made of rice), puffed rice, rugs etc – in all cases scale is a big issue and there is absence of any formal large market player. If intervened, the outreach will be much smaller (few hundreds to one thousand maximum). Therefore, if 'value for money' is considered, investing project resources in these value chains may not make much sense.

However, in order to improve the livelihood of the target population, creating opportunity to work during the lean period is important. A two-pronged strategy can be considered – a) identifying and promoting appropriate off-farm value chains that has scale and growth prospect, and b) improve the vocational skills of the targeted household members as there is strong migration tendency to the growth centres (urban and semi-urban). Current migration and thereafter engagement in different occupations shows that most migrating people end up with low-paid, low-skilled jobs while good cases such as engagement in carpentry was also found.

Off-farm VC selection strategy

As the exploration of potential off-farm value chains in the targeted regions did not show much promise, the project may consider starting from end-market opportunities in large growth centres such as Dhaka. There is a growing local ready-made garments industry in Bangladesh. It is important to note that the women clothes manufactured in the export oriented garment industry do not go along with the culture of Bangladesh and hence, women clothes are produced by a different garment manufacturing segment. Most of the jobs are outsourced to rural areas where cheap labour is available. Large retail clusters in Dhaka such as Gaousia, Mouchak markets and also retail brand outlets such as Aarong, Kay Craft, Anjans and many more – all outsource different jobs such as embroidery, karchupi, hand stitch to rural areas. This is a growth sector and can be tapped by the project. Success stories are available as did by project like PROSHAR (USAID funded implemented by ACDI/VOCA) in Batiaghata, Khulna where few thousand women are integrated with Dhaka market through a few women led enterprises/suppliers. Another example is a project implemented by Asroy

foundation in Rajshahi with similar achievement. The project may start negotiating with large buyers in Dhaka and other big cities (in the regions also), understand their demands and find the gaps. Following this, the project may sign a partnership agreement where the private sector buyer will train the producers (or few key intermediaries who will in turn train their workers/producers). Since, there is cost to train the new producers and also the cost of materials during training period, the project may consider sharing part of that cost. This is an opportunity in one particular industry (women ready-made garments). The project should explore other similar opportunities in large growth centres where buyers outsource their jobs in rural areas.

Vocational skills development strategy

It is unlikely that the local economy in the targeted regions will improve drastically and migration will stop. Besides, improvement of local economy also depends on how much money will flow into those areas where income from migrators can play significant role. Therefore, instead of putting efforts to discourage migration, a more appropriate approach would be how to make the migration more productive and income generating. For this, the project may consider undertaking a labour market survey. The scope of the research may include but not limited to identifying the mobility of the migrators, their occupations after migration, skill based job opportunities in those areas with educational requirement, current level of skills of the targeted people and the mismatch with job market, existing service provisions to improve those skills among others. Based on the research, the project may adopt a facilitative approach to improve the skills of the people from the region.

Overall Strategy and next course of action

The strategy

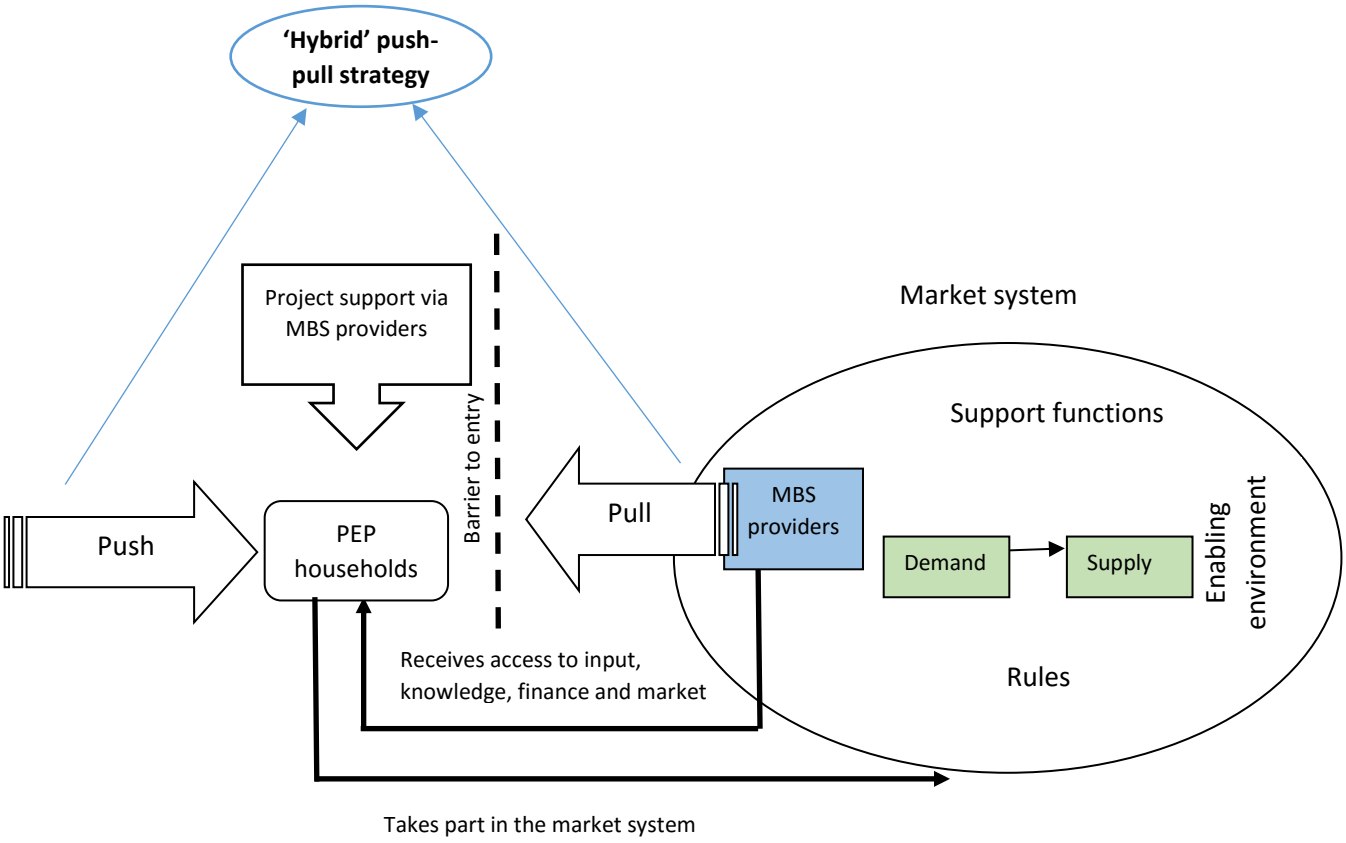
While the key facilitation activities for each value chain are delineated under respective value chain analyses parts, this section highlights on overall strategy and how to turn the strategy into action. The overall strategy is three-pronged –

a) ‘push’ strategy: by pushing the target population into the selected value chains by removing the barriers to entry into market system such as by improving access to inputs, knowledge, finance and market

b) ‘pull’ strategy: by pulling the private sector (and public sector where applicable) to consider the target population as buyers and suppliers

c) ‘hybrid’ strategy: by keeping options open to support only those PEP households (most destitute) who otherwise may remain incapable to participate in the market system by only push-pull strategy. However, these supports should not be direct and transferred through indirect mechanism (voucher, cash incentives etc.) and through market players.

Figure 11: Overall strategy for value chain development



Strategy into action

In each of the value chains, the study has identified the key constraints, the MBS and the potential MBS providers. Instead of direct intervention, the project's role is to partner with MBS providers to address respective constraint and assist the MBS provider to overcome its challenges. MBS providers are already part of the market system while PEP households are not or struggling to gain competitiveness. While the VC analyses have identified key facilitation activities and potential MBS providers, the project staff needs to follow a few key guidelines to implement the VCD activities. These are as follows:

1. Selection of MBS provider/partners: The study has already identified potential private sector partners such as Syngetna and Petrochem as input companies and Aftab feed mill in maize value chain and also ACI and The Chemist in Goats value chain who showed their interest to work in the region. The project now should ask them to submit an Expression of Interest (EoI) how they want to address the market constraints in those regions. In parallel, the project may also consider opening up opportunities for other interested companies by putting advertisement (EoI) in print and/or electronic media. This will also create a level playing field for all companies and the project will have better opportunity to select the best partner/s. The advertisement of EoI should include the target region, target population, market constraints and the companies should respond how they would like to address those. Once both the options have been tried (direct communication and through advertisement), the project should review the EoIs and short-list them to continue further discussion. At this stage, the project personnel must conduct a due diligence of the companies applied to

ensure their legal status, market reputation, similar work in other development projects among others.

2. In the next round of discussion, the companies will be asked to provide a detail list of activities (sample activities are provided as examples in the analyses section based on experience) following their initial EoI on how to address the market constraints. It is important to note (a guiding principle) that the project should not try to impose any activity as MBS providers know better about market system. At the same time, the companies should also be made aware of the incentives they may have by this collaboration. At this point, they should also come up with budget for those activities. One reason for them not to address those constraints are resource limitations. The project will offer a cost-share but without giving a specific amount and will keep it open. This will give an opportunity to assess the buy-in of the companies – who are willing to invest more to tap the market opportunities.
3. Afterwards, the project will evaluate the proposals by the companies and rank them in order of quality and buy-in. The next round is more collaborative discussion to sharpen the activities and also to make sure the activities address the project interests. Once both parties come to an agreement, the project will prepare an MoU delineating all the clauses and also the activities and budget. This should also include cost-share modalities and the payment structure. The project may consider partner with more than one company for each value chain depending on the area coverage and type of services to be provided by the MBS provider/s.
4. The next step of the project is to monitor the implementation of the agreed activities. Another important guiding principle for the project is that the project must not take part in implementation of any activity agreed by the MBS provider to implement and only monitor their performance. If the project finds the partner is not performing well, it can terminate the MoU at any point of time (this should also be included in the MoU).
5. In few suggested interventions, there are no large firms (such as in *Chai*, the wholesalers). However, the approach should be the same though EoI by advertisement may not be appropriate. Identification and then one-to-one discussion may yield quick results to select appropriate MBS providers.
6. Since the overall strategy is referred to as hybrid push-pull strategy, the project supports to the PEP households fall under calling the approach as 'hybrid'. These supports should be targeted for only the most destitute households who may not be able to enter into market system by intervening through push-pull only. For them, indirect financial supports are recommended under this 'hybrid' approach. At the same time, it is to be ensured that the project does not provide such financial (cash or kind) supports directly to those PEP households and transfer those through transactions between PEP households and MBS providers. Such mechanisms such as voucher, cash incentive etc. are explained in the facilitation activities under each value chain analyses.

Annex A: Training report

Annex B: VCD Guidelines