



## Strategies for Encouraging Participation of Marginalised Households in Shrimp Value Chains of Coastal Region of Bangladesh

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### ABSTRACT

Shrimp sector contributes significantly to export earnings and employment generation for on and off farm activities in Bangladesh. Expansion of shrimp farming naturally lead to a change in use pattern of coastal land, in the form of a shift in land from other economic and environmental uses to shrimp culture. But marginalised households are rarely participating in shrimp value chain because they have very limited access to resources. The present study identified the constraints to participation of marginalised households in shrimp value chains in order to formulate effective strategies for encouraging participation of marginalised households. To attain this qualitative data were collected from Khulna, Bagerhat and Satkhira districts of Bangladesh through 6 focus group discussions and 40 in-depth interviews during July to September 2018. In total, a sample of 100 respondents, containing 60 marginalised households from focus group participants, 30 private and 10 public stakeholders was selected purposively for the study. Thematic content analysis was employed for analysing the collected qualitative data. It was evident that the marginalised households engaged mostly as labourers in shrimp value chain and added some value in each node. As no sampled marginalised household was engaged as shrimp farmers, they showed their keen interest to become shrimp farmers. Both the participant and non-participant marginalised households reported some constraints to become shrimp farmers. The study identified market-based solutions of the key constraints. The participant and non-participant marginalised households stated their own strategy that by forming group they could become shrimp farmers. The public and private stakeholders recommended 'push', 'pull' and 'blend' (push-pull) strategies for participation of marginalised households in shrimp value chains. Interventions targeting the marginalised people are needed for their entry into shrimp value chains. Marginalised households should form collectives/ association/ farmers club/self-help group for greater extent of participation in shrimp value chains.

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### Introduction

Shrimp sector contributes significantly to the national economy of Bangladesh by contributing to export earnings and employment generation for on and off farm activities. However, even with the present production practices, shrimp farmers and other people are involved in shrimp production, processing and marketing. Through forward and backward linkages with shrimp farming, related industries have been developed and many groups of people are involved in different industries. However, the shrimp industry consists of four distinct subsectors viz., shrimp farms/*gher*, shrimp hatcheries, feed mills and shrimp processing plants. Shrimp farms are the mainstay of the industry and the activities of the other subsectors depend largely on the growth and sustainable development of shrimp farms in

the country. Shrimp farming offers excellent employment opportunity through a series of backward and forward linkage activities and accordingly, different group of people (stakeholders) are directly and indirectly involved in shrimp industry. They are shrimp farmers, shrimp farm labourers, and workers and owners of related industries (hatchery, feed mill, depot, processing plant, and export agency), shrimp seed collectors, land lessors and shrimp traders. For all the subsectors in shrimp industry, women get the opportunity to be employed and they are actively involved in different activities of shrimp industry. Women workers participated in different activities of shrimp industry but still male participation and involvement are dominant compared to women.

### Cite This Article

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There are two production zones of shrimp in Bangladesh, the brackish-water tidal areas of Bagerhat, Satkhira and Khulna; and the mangrove areas of Chattogram and Cox's Bazar. The Southern region (Bagerhat, Satkhira and Khulna) contributes about 70% of the total shrimp production of Bangladesh and about 95% of the total national production of prawn comes from this area (BBS, 2010-11). About 75% of the total land is under shrimp and prawn production in this region (Belton *et al.*, 2011). The region thus plays key role in sustaining the production and export of shrimp/prawn from Bangladesh. The rest of the production is mostly concentrated in the coastal region in Chattogram and Cox's Bazar. Within the Southern region, Satkhira, Bagerhat and Khulna are the major production hubs (WorldFish, 2011). However, there are about 0.30 million ha of brackish water areas in Bangladesh of which 250,000 ha has brought under shrimp farming (SHAB, 2010).

Due to the high potential short-term economic benefits of shrimp farming and increased saline water intrusion in the field many small farmers have been encouraged to shrimp farming rather than agriculture (Fatema and Miah, 2011). But the poor or marginalised households (MHHs) of the community or vulnerable households have a very limited scope to be involved in shrimp culture because they have very limited access to resources. There are apparent conflicts between subsistence agriculture and shrimp culture and conflicts over land rights and access to resources. Acquisition of command over coastal resources by powerful rural elite and private entrepreneurs from outside resulted in loss of livelihood and employment to the rural poor, growing marginalisation of peasants, fishermen and workers, widening inequality in income distribution, decline in food security, etc. Marginalisation creates harsh conditions for individuals, groups or classes of people and makes them feel less important than others. "Marginalisation is the process of pushing a particular group or groups of people to the edge of society by not allowing them an active voice, identity, or place in it. Through both direct and indirect processes, marginalised groups may be downgraded to a secondary position or made to feel as if they are less important than those who hold more power or privilege in society" (Krishnamurthi and Ojha 2019). Apart from the outsiders, local influential people also forcibly occupy land of the comparatively weaker smallholders. Moreover, Alam and Lasker (2012) reported the non-payment of lease money to small landowners and breach of agreements. Another illegal practice was to grab *khas* land that ought

to have been leased to the landless (Alam and Lasker, 2012). Thus, land holdings of small farmers as well as *khas* land have been declining while large landowners have been acquiring more land. An inclusive shrimp value chain can create decent work opportunities for the most marginalised farmers, including women. The marginalised households of shrimp producing areas are about to exclude from shrimp value chain (SVC). However, considering both the upstream and downstream activities of shrimp value chain, this study undertook inclusive shrimp value chain analysis in the study areas in order to identify strategies for encouraging participation of marginalised households in a manner that extend benefits from agricultural intensification across actors in the chain. In order to achieve this, the value chain analysis must also consider barriers, constraints and risks of participation, while realising that participation in agricultural value chains may not be the only option for increasing livelihood resilience for marginalised households. This includes both the dimensions of social exclusion as well as adverse incorporation.

Although shrimp farming has created employment, marginal and landless farmers, and agricultural labourers are the most affected groups since the same amount of land is using for shrimp farming requires fewer people employment compared to agriculture. Marginalisation of rural poor, as a result of the expansion of shrimp farming, is due mainly to deprivation of people from the ownership of land, denial of access to or destruction of common property resources like fishing grounds and mangrove forests. The present study identified the constraints to participation of marginalised households in shrimp value chains in order to formulate effective strategies for encouraging participation of marginalised households. The literature reviews indicated a number of studies (Miah, 2001; Islam *et al.*, 2002; Miah *et al.*, 2002; Islam and Wahab, 2000; Salequzzaman, 2001; Kabir, 2011; Islam *et al.*, 2006; Barmon *et al.*, 2011; Islam *et al.*, 2011; Alam *et al.*, 2011; Sathy and Islam, 2013; Ullah, 2013; Toma, 2013; Islam *et al.*, 2014, Efan, 2017 and, Hossain and Hossain, 2019) were dealt with profitability analysis, impacts of shrimp farming and supply chains and value chains of shrimp. To the best of the researcher's knowledge, no studies dealt with inclusive shrimp value chain analysis and constraints to participation of marginalised households in shrimp value chains. However, the present study was intended to identify the effective strategies for encouraging participation of marginalised households in shrimp value chain.

### Methodology

The study identified the constraints to participation of marginalised households in shrimp value chains (Figure 1) of the coastal region of Bangladesh. More importantly, the study identified the effective strategies for encouraging participation of marginalised households in shrimp value chain. Constraints to the participation of participant marginalised households as shrimp farmers and participation of non-participant marginalised households in shrimp value chains, market-based solutions of the constraints, and strategies from marginalised households and from public and private stakeholders are explained in this study.

In this study, qualitative data were collected from Khulna, Bagerhat and Satkhira districts of Bangladesh in order to deal with the research question during July to September 2018. Data were collected through focus group discussions (FGDs) and in-depth interviews. Six

focus group discussions were conducted in the study areas with a total of 60 marginalised households considering participants and non-participants of shrimp value chains. Two FGDs were conducted in each study area of which 1 was for participants and another was for non-participants of shrimp value chains. For validation, cross-reference and strategy formulation data were collected by a total of 40 in-depth interviews with different value chain actors such as hatchery owner, *gher* owner, input supplier, shrimp traders, depot owner and processing plant/export agency and public stakeholders such as District Fisheries Officer, Senior Upazila Fisheries Officer and Officers of Department of Fisheries. Study design and distribution of samples stakeholders are shown in Table 1. In total, a sample of 100 respondents, containing 60 marginalised households from focus group participants, 30 private and 10 public stakeholders were selected purposively for the study.

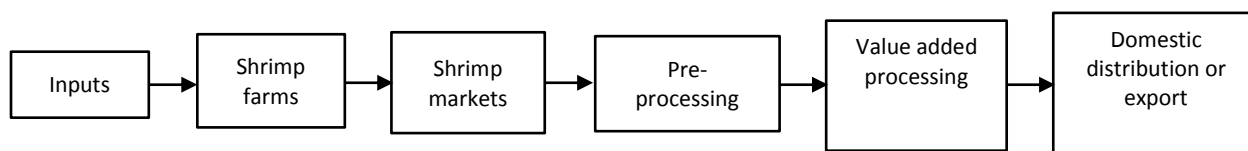


Figure 1. Flow diagram of a typical shrimp value chain. Source: Haque (2019)

Table 1. Study design and distribution of stakeholders for the present study

Respondents	Data collection methods used	Study area and No. of marginalised household			Total (Nos.)
		Khulna	Bagerhat	Satkhira	
Marginalised households	Focus group discussions (6)	21	19	20	60
Private stakeholders*	In-depth interviews	10	10	10	30
Public stakeholders**	In-depth interviews	5	2	3	10
Total	-	36	311	33	100

\*Hatchery owner, *Gher* owner, Input supplier, Shrimp traders, Depot owner and Processing plant/Export agency.

\*\*District Fisheries Officer, Senior Upazila Fisheries Officer and Officers of Department of Fisheries (DoF).

Thematic content analysis was employed to qualitative data collected from marginalised households focus group discussions and in-depth interviews. Memos were made of all of focus group discussions and in-depth interviews. In order to accomplish thematic content analysis on these discussions, the memos were later converted into codes. Thematic content analysis revealed two major themes in the marginalised household through FGDs and in-depth interviews with public and private stakeholders. Necessary themes linking to constraints to be involved in shrimp value

chains and strategies for encouraging participation of marginalised households in shrimp value chains were attained. These themes were important in achieving the objectives of the study. Thematic content analysis is a suitably recognized and mostly employed technique in qualitative research, especially in case study methodology (Attride-Stirling, 2001; and Hsieh and Shannon, 2005). In the present study, thematic content analysis was done using a framework suggested by Creswell (2009) for data analysis in qualitative research (Figure 2).

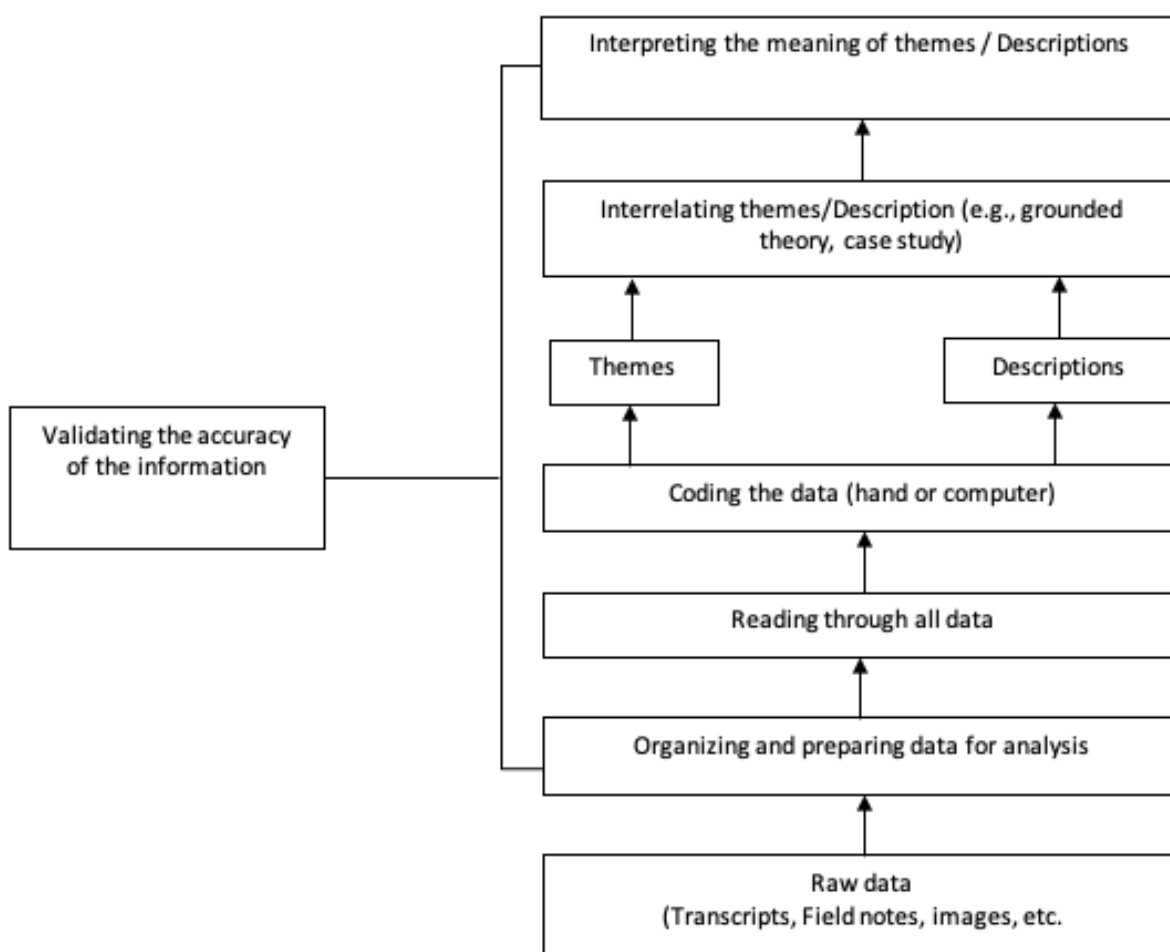


Figure 2. Framework for qualitative data analysis. Source: Creswell (2009).

## Results and Discussion

### *Value addition by marginalised households*

The marginalised households were engaged in shrimp value chain as wild shrimp fry catcher and trader, shrimp *gher* labourer, shrimp trader (*faria*), shrimp depot labourer and shrimp fry numerator. It was evident that the marginalised households engaged mostly as labourers in every nodes of the shrimp value chain. They might have the contribution to add some value in each node of shrimp value chain. The contribution of marginalised households in shrimp value chain for value addition is shown in Figure 3. Islam *et al.* (2014) and, Hossain and Hossain (2019) measured the amount of value addition by market actors in each node of shrimp value chain. But this study identified the value addition activities done by marginalised households (Figure 3).

### *Constraints to participation in shrimp value chains*

Participant marginalised households had the eagerness to become shrimp farmers. They were asked upon the

constraints to be involved as shrimp farmers. Most of the FGD participants identified that lack of money, land, quality shrimp seed and feed, and security problem were the major constraints to be involved as shrimp farmers. A few of them stated that disease, lack of training, water scarcity and heavy rain were constraints to be involved in shrimp value chain as farmers (Table 2). However, the FGD participants were questioned on the most important constraints among which they identified. Unanimously, they opined that money and land were the prime constraints to be involved in shrimp value chain as farmers (Figure 4). At one point of discussion, they argued that there was a huge amount of leasable lands for shrimp farming in the study areas. They added that if money was available, it was easy to lease in land for shrimp farming. It may be concluded that finance was one of the principal constraints to participation of marginalised households in shrimp value chain as farmers. The participant marginalised households could involve in shrimp value chain as shrimp farmers if they have had appropriate source of finance.

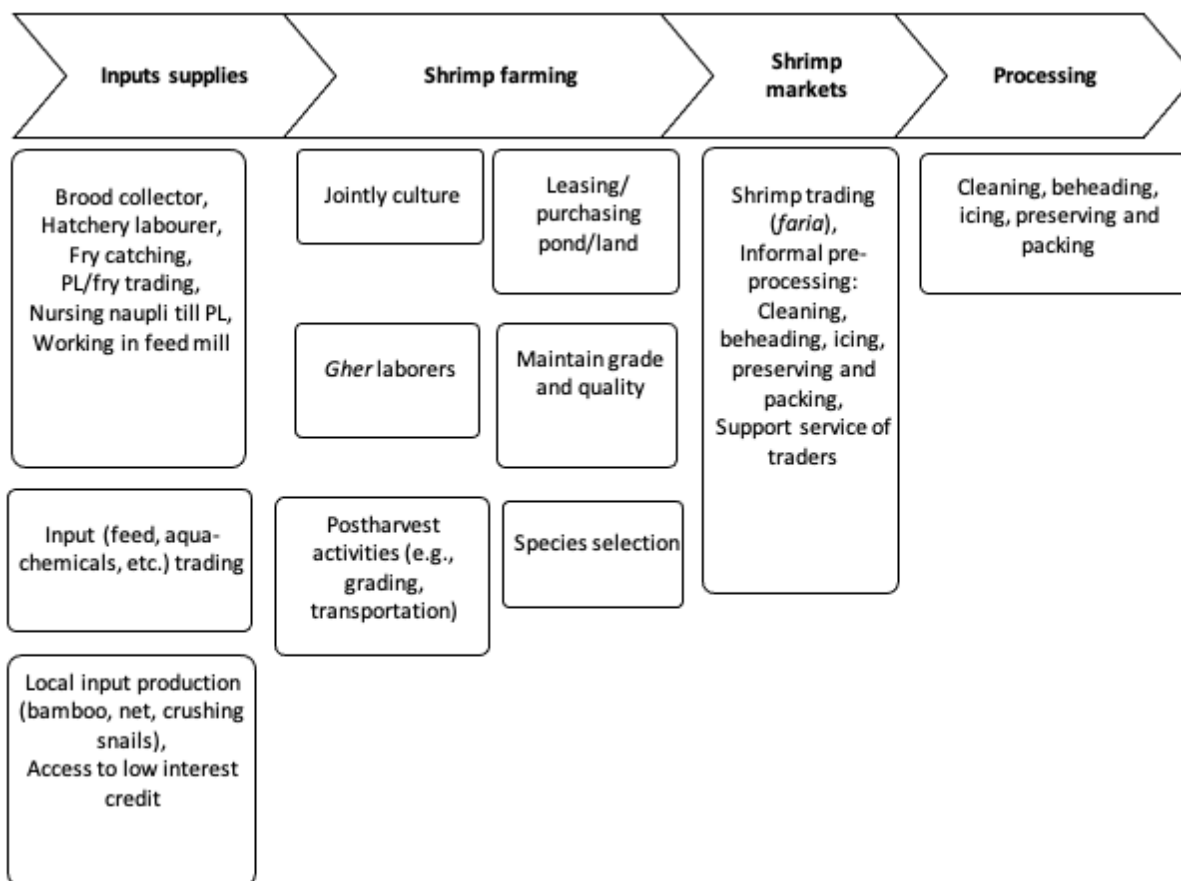


Figure 3. Value addition activities done by marginalised households

Table 2. Constraints to participation of participant MHHs as shrimp farmers

Involved as	Constraints to be involved in SVC as farmer
Shrimp depot labourer	Lack of money and land Lack of quality shrimp seed and feed Security problem
Shrimp fry numerator	Lack of money and land Lack of quality shrimp seed and feed Security problem Heavy rain Disease
Wild shrimp fry catcher and trader	Lack of money and land Lack of quality shrimp seed and feed Security problem Water scarcity Disease
Shrimp <i>gher</i> labourer	Lack of money and land Lack of quality shrimp seed and feed Security problem Lack of training Lack of technical knowledge
Shrimp trader ( <i>faria</i> )	Lack of money and land Lack of quality shrimp seed and feed Security problem Lack of training

Source: Field survey, 2018.

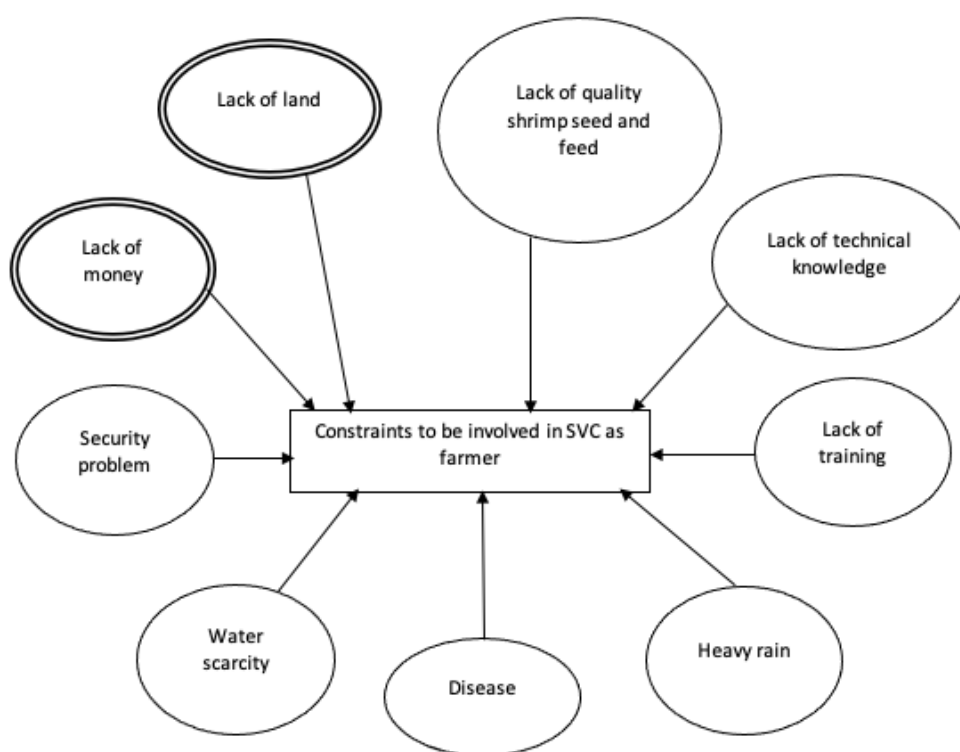


Figure 4. Constraints to be involved in SVC as farmer

#### Constraints to participation of non-participant in SVC

It was evident that the non-participant marginalised households had the eagerness to engage in shrimp value chains as shrimp depot labourers, *gher* labourers, shrimp farmers and shrimp traders (*faria*). They were requested to identify the constraints to their engagement in shrimp value chains. The identified constraints corresponding to their eagerness to be engaged in shrimp value chains as respective actors are presented in Table 3. The non-participant marginalised households, who had the eagerness to be involved as shrimp *gher* and depot labourers identified as constraints were lack of experience and technical knowledge, hard work and lower wage, and sometimes workless. Secondly, lack of money, credit sale, delay payment from *arat*, mortality and disease were the constraints identified by the non-participants marginalised households having eagerness to be involved as shrimp traders (*faria*). Likewise, participant marginalised households and non-participant marginalised households identified several constraints to be involved as shrimp farmers. The constraints were lack of money and land, lack of quality shrimp seed and feed, lack of technical knowledge and training, mortality and disease, and credit sale of shrimp. Muzareba and Khondkar (2019) reported that persisting sociocultural realities particularly around the contested social justice and power inequality make it difficult for the bottom of the pyramid to enjoy fair economic gains from shrimp production despite their invaluable contributions to shrimp sector.

Table 3. Constraints to participation of non-participant MHHs in shrimp value chains as respective actors

Eagerness to be engaged as	Constraints faced
Shrimp depot labourer	Lack of experience Hard work Lower wage
Shrimp <i>gher</i> labourer	Sometimes workless Lack of technical knowledge Lower wage
Shrimp farmer	Lack of money and land Lack of quality shrimp seed and feed Lack of technical knowledge Lack of training Mortality Disease Credit sale
Shrimp trader ( <i>faria</i> )	Lack of money Credit sale Delay payment from <i>arat</i> Mortality Disease

Source: Field survey, 2018

#### Constraints and market-based solutions

After identification of the key constraints – root causes corresponding market-based solutions (MBS) were identified. Table 4 summarises the constraints and market-based solutions identified during the field investigation in the coastal region of Bangladesh for encouraging participation of marginalised households in shrimp value chain as farmers. After having pin pointed the probable market-based solutions a prioritization exercise was undertaken using a simple 3X3 ranking grid.

Table 4. Constraints and market-based solutions identified in the study

Key constraints	Market-based solutions
1. Lack of money	1. Access to finance
2. Lack of land	2. Access to lease in land
3. Lack of technical knowledge on shrimp culture	3. Provision of knowledge on culture techniques
4. Lack of quality shrimp seed and feed	4. Improve distribution channel of reputed input companies
5. Lack of training	5. Access to training

Source: Field survey, 2018

It was judged best to pursue all the potential market-based solutions given the ranking (Table 5). This was the case as the key root causes of the problem was looked at rather than the symptoms. It was evident from the table that both marginalised households' involvement and potential, and income increase potential were high for all the identified market-based solutions.

Table 5. Prioritization of market-based solution

Income increase potential	High	1. 2. 3. 4. 5.		
	Medium			
	Low			
		Low	Medium	High
Marginalised households' involvement and potential				

Source: Field survey, 2018

Strategies from marginalised households

Both shrimp value chains participant and non-participant marginalised households identified their own strategies by themselves for involving in shrimp value chains as farmers. Their strategies delineated in Figure 5. In the focus group discussions, both the participant and non-participant marginalised households expressed possible strategies for involving in shrimp value chains as farmers. They stated that by forming group, investing their savings and taking loan from both institutional and non-institutional sources they could form capital. After capital formation they could lease in suitable lands for setting up small-scale shrimp gher/farm. In this way the

marginalised households could involve as shrimp farmers in shrimp value chain.

Strategies from public and private stakeholders

While the key facilitation activities for encouraging participation of marginalised households in shrimp value chain as farmers are outlined under assessment of market-based solutions of the constraints, this section draws attention to the strategies from public and private stakeholders and how to turn the strategy into action.

The strategies are divided into three heads.

(a) 'Push' strategy: Push means force from origin to move new areas/venture. By pushing the marginalised households into shrimp value chains by removing the barriers to entry into value chain system such as access to finance, land, inputs, knowledge and market may be the way of encouraging participation in the chain. In this strategy, by pushing the intervener(s) can provide supports to marginalised households through MBS providers to take part in the value chain system (Figure 6).

(b) 'Pull' strategy: By pulling the private sector as well as public sector to consider the marginalised households as shrimp traders and farmers, then by their support functions via MBS providers within the existing law and institutions, and enabling environment marginalised households may be involved in the shrimp value chain (Figure 6).

(c) 'Blend' strategy: This strategy deals with having opportunities unrestricted to support only those marginalised households who otherwise may remain lacking ability to participate in shrimp value chain by only push-pull strategy. However, these supports should not be direct and transferred through indirect mechanism (land settlement, voucher, cash incentives, etc.) and market players (Figure 6).

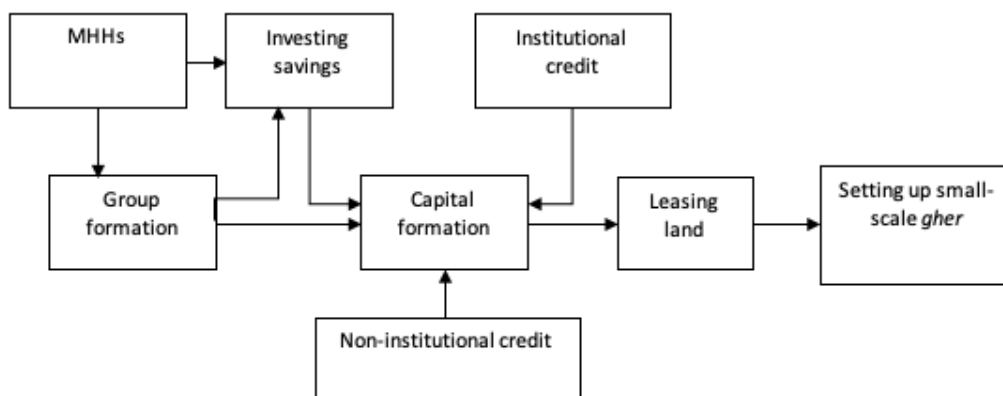


Figure 5. Strategies of marginalised households for involving shrimp value chains as shrimp farmers

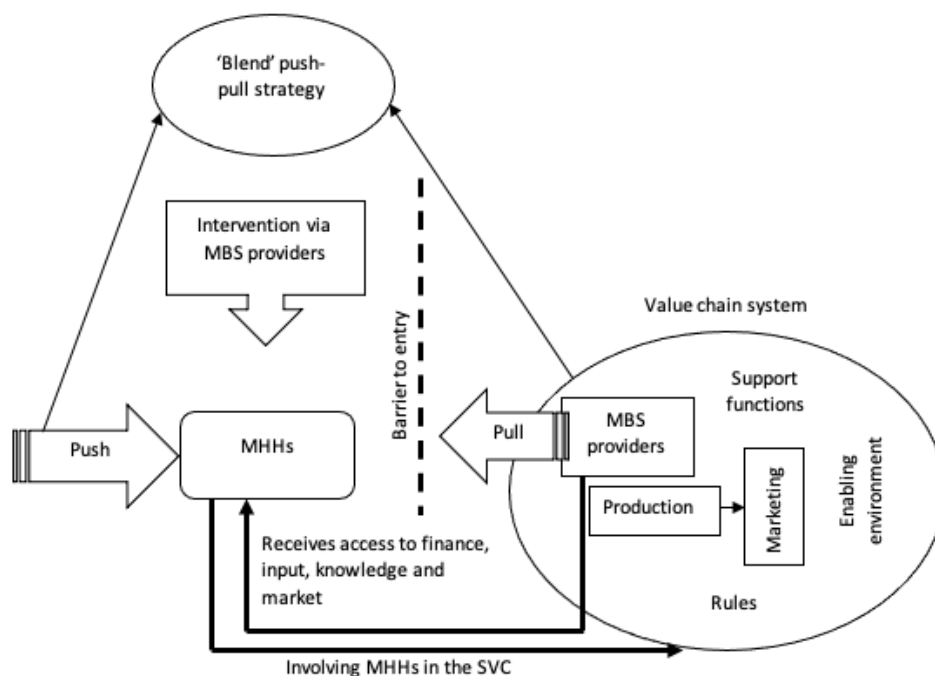


Figure 6. Strategies for encouraging participation of marginalised households in shrimp value chains

### Strategy into action

The study has identified the key constraints of participation of marginalised households in shrimp value chains, the market-based solutions and the potential MBS providers. Instead of direct intervention, the public and private stakeholders' roles are to be a partner with MBS providers and to address respective constraints and assist the MBS provider, to overcome its challenges. MBS providers are already part of the market system while marginalised households are not or struggling to gain competitiveness. While the value chain analysis has identified key facilitation activities and potential MBS providers, the public and private stakeholders need to follow a few key guidelines to implement the value chain development activities.

Since, the overall strategy is referred to as 'blend' push-pull strategy, the interventions to the marginalised households fall under calling the approach as 'blend'. These supports should be targeted for only the most destitute households who may not be able to enter into the market system by intervening through push-pull only. For them, indirect financial supports are recommended under this 'blend' approach. At the same time, it is to be ensured that the intervention does not provide such financial (cash or kind) supports directly to those marginalised households and transfer those

through transactions between marginalised households and MBS providers. Such mechanisms such as voucher, cash incentive etc. are explained in the facilitation activities under value chain analysis.

### Conclusion and Recommendations

Both the participant and non-participant marginalised households identified several constraints to be involved in shrimp value chain as shrimp farmers. The constraints were lack of money and land, lack of quality shrimp seed and feed, lack of technical knowledge and training, mortality and disease, and credit sale of shrimp. After identification of the key constraints—root causes corresponding market-based solutions were identified. The participant and non-participant marginalised households stated that by forming group they could involve as shrimp farmers in shrimp value chain. The public and private stakeholders recommended 'push', 'pull' and 'blend' (push-pull) strategies for participation of marginalised households in shrimp value chains. Marginalised households should form collectives/association / farmers' club/self-help group for greater extent of participation in shrimp value chains.

### Conflict of Interests

The authors declare that there is no conflict of interests regarding the publication of this paper.



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