

Promoting Socially Inclusive and Sustainable Agricultural Intensification in West Bengal
and Bangladesh (SIAGI)

A Comparative Value Chain Analysis of Major Crops at Haldibari Market

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1 Background to the study

The objective of this study is to understand the value-chain related dynamics in the wholesale vegetable market of Haldibari and share the experiences with the farmers of the study villages of West Bengal selected under the SIAGI project. The other major objective of this study was to link the learning from Haldibari to the value chain analysis component of the SIAGI project.

About the Haldibari Market

Haldibari is a small municipal town located in Cooch Behar district of West Bengal. It is well connected with different parts of the country by road through the national highways NH27 and NH31. There is also railway connectivity that links Haldibari to other places of the country. It is reported that there are around 70 wholesale traders operating in the market through around 40 syndicates/trading firms. Some of these syndicates are run by joint partnership of two to three traders. Only six to seven are big trading units with around 40 being medium traders. Many of the trading firms are also run by only one trader. Major crops which are traded in the market include tomato and chilli during mid January to May, jute during July-August, cucumber during October-November, and green peas, etc. during January-February.

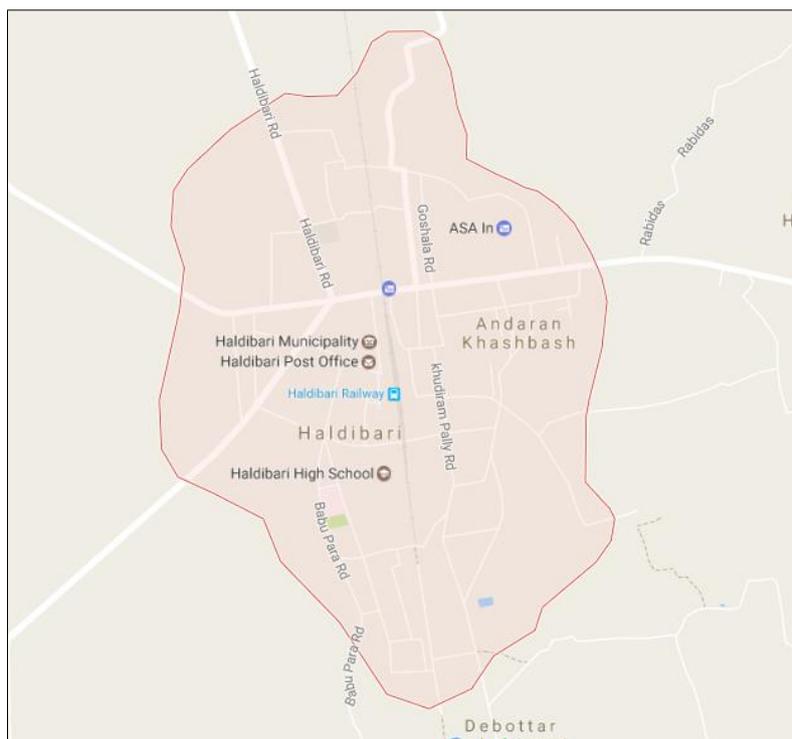


Image 1. Location of the Haldibari Wholesale Market; Source: Google Maps

2 Sources of Produce into the Market

Supply of produce into the market at Haldibari comes from different places of Cooch Behar and Jalpaiguri. While Dewangunj, Baxigunj, Uttarbari and Haldibari are the main areas of supply in Cooch Behar district, the major sources in Jalpaiguri district include Ghughudanga, Kashiabari, Manikgunj and Gourbangabajar.

Interestingly, every syndicate (joint venture between two or more traders) does not do business everywhere in India. The jurisdiction of trading is chosen by the traders depending on their convenience, networks, experiences, etc. Thus, each syndicate has some specified regions to do business. For example, while some traders do business in the North Eastern states, some are engaged in trading in the Southern states of the country. Similarly, some of traders do business in Punjab, Haryana and Delhi, whereas some others are engaged in Jharkhand, Bihar and Uttar Pradesh. However, sometimes the traders select the geographical area of doing business in consultation with the traders' association.

According to the rule of the local traders' association, no trader is allowed to buy produce directly from the field. This is so because if the traders are allowed to buy produce directly from the field, they may get the same at lower prices through better networks and/or contractual arrangements with the farmers. On the other hand, farmers and middlemen, who bring the produce to the market, may charge higher price. As a result, the traders who buy produce in the market may have a price disadvantage. This is likely to create unhealthy price competition among traders leading to distortions in functioning of the market forces.

Also, there may be high degree of price uncertainty in the market. While transportation and opportunity costs including other transaction costs are expected to cause price differential at the farm gate vis-à-vis in the market, this aspect should be analysed more deeply for various reasons. What is important here is not simply the difference in prices, but the extent of the difference and the factors causing the same. In this context, networks of the traders with the farmers (directly or through middlemen) and contractual agreements are likely to be very important.

Second, an important question is where do the small and marginal farmers sell? This is very important as bargaining power of the farmers and their choice of selling points (at farm gate versus in the market) are likely to depend on the scale of farming (hence on size of landholding and/or strength of the collectives, if any) and the price differential between the two points vis-à-vis various associated costs. Can a small or marginal farmer afford/prefer to sell their produce in the market even when there is price differential (higher price after adjusting for various costs)? If not, the traders with strong networks and contractual arrangements are likely to have price advantage and there may be under-pricing when the produces are sourced at farm gate. This is likely to affect the small and marginal farmers adversely.

Thus, there is a possibility market distortions as scale (or size), network and contracts can create entry barriers and reduce mobility of framers and their produce (especially under contracts). Hence, role of collectives is very important, especially from the perspective of the small and marginal farmers. This is so because collectives can enhance scale and hence bargaining power

through greater mobility. Given that the informal rule of the market is not to buy directly from the field, collectives can bring their produce to the market and sell there to the traders. In addition to bargaining power, such an attempt would be scale and cost efficient as well particularly when compared with a single farmer.

Further, according to the rule of the association, farmers and middlemen bring the produce into the market and the traders buy from them there (in the market) only. Also, the traders are not allowed to source produce from farmers' cooperatives. They can buy only those produces which are brought into the market by individual farmers and middlemen. Generally, these rules are set by the traders' association and the farmers (especially the small and marginal farmers) have no role as such in this regard. For small and marginal farmers, the wholesale market is not the best place to sell. Other routes for market access to other customers may need to be explored. However, relationships can still be built within the market, and as long as the farmers are producing efficiently and to the right quality, then they may be able to consistently rely on the wholesale market as a selling mechanism.

3 Practices Followed in the Market

Grading of Produce

In case of tomato, the tiny and overripe categories are sorted out. Till the last year, these sorted tomatoes used to be sold to the processing factories located in Nepal. However, in the current year, there is no order from Nepal, probably because of availability of tomato paste from China at much lower price. As a result, traders had to throw away a lot of such tiny and overripe tomatoes this year leading to considerable loss of revenue in their business. This is particularly so as there is no processing factory in the nearby area.

On the other hand, in case of chilli, no grading is done. This may imply little opportunity for value addition to the crop under the current practices. However, there is export potential of chilli if it is cultivated through organic approach. In addition, cultivation of red chilli can open up the possibility of processing. There are three main varieties of chilli that are generally supplied into the market, viz., *Akashi*, *Bullet* and *Microsuper*. While *Akashi* has the largest market share, the price is the highest for the *Microsuper* variety followed by *Bullet* and *Akashi*. However, chillies have not been immune to export issues. For example, they were banned by Bhutan in 2016 because of pesticide content. Hence, emphasis on organic farming is imperative to enhance its export potential

As for potato, it is not traded at Haldibari market. This crop is directly bought from the field by the traders and middlemen and transported to the cold storages. Many of the farmers (especially the large farmers) also send potato directly to the cold storages. However, a part of the production is directly sold to the consumers in the local retail markets.



Image 2 Sorted Tomato before Packaging

Mode of Transport

Generally, farmers and middlemen deliver their produce into the market by small motor vans and manual vans. On the other hand, trucks are the primary mode of transport used by the traders for sending the produces to different parts of the country. There are mainly three types of trucks – big trucks (with maximum 20 tonne load), medium trucks (with maximum 15 tonne load) and small trucks (with maximum 9 tonne load) that are used by the traders for transportation purposes.

Destination of Produce

A large proportion of chilli is sent to the places like Kolkata, Panskura, Chakdah and Ranaghat of West Bengal and also to other places of India including Delhi. On the other hand, tomato from Haldibari market is generally supplied to Assam, Meghalaya, Agartala, Uttar Pradesh, Punjab, Andhra Pradesh, Tamil Nadu (mainly to Chennai), Karnataka (mainly to Bangalore), and Kerala. A part of the production is also sold to the retailers. Furthermore, some of the farmers sell their products directly to the consumers as well.

Transportation Costs

The traders pay the transportation charges in terms of the amount of the produces being transported. For example, it takes 5 Rupees per kilo (Rs./kg) for transportation of chilli to Bihar, Rs. 8-10/kg to Delhi, Rs. 9-10/kg to Chennai, and Rs.17/kg to Nasik and Mumbai. However, these charges vary from year to year generally with an increasing trend. Sometimes, the charges also depend on the time span allowed to reach the destination. For example, it charges Rs. 47-48 thousand for a 15 tonne capacity truck to carry tomato from Haldibari to Delhi within a maximum allowed time of four days. On the other hand, Rs. 51-52 thousand is charged for a 15 tonne loaded truck to transport chilli from Haldibari to Delhi in 32 hours. There is also reward system for the drivers for reaching the destinations in time. For example, if the driver reaches Delhi within the stipulated time of 32 hours, he gets a reward of Rs. 6 thousand.

Labour Costs

For a medium trading syndicate/firm, there are 30 to 35 regular workers earning Rs. 9 to 10 thousand each per month. During peak time/season, additional five to ten workers are hired, but through the existing workers only. Workers are paid on the basis of the nature of works they do such as sorting, packing, sacking and loading, etc. For example, Rs. 6 is paid for packing one carton or filling one sack of vegetables. On the other hand, Rs. 5 is paid for loading one sack/carton into the trucks. Apart from wages, the workers also get allowances for their snacks, etc. However, the amount of this allowance varies across the syndicates/firms.

Women's Participation

Most of the workers engaged at Haldibari market are male except only two to four women working in one of the syndicates. The traders interacted with are of the opinion that conditions in the market are not suitable/conducive for engagement of women workers. These women are

generally engaged for sorting and packaging of the produces. Importantly, there is no wage differential between the male and female workers.

Risks and Returns

Generally, big trading firms/syndicates do business of around Rs. 15 crore (Rs. 150 million) annually, whereas the volume of annual business for the medium and small syndicates/firms are Rs. 10 crore and Rs.3-4 crore respectively. These syndicates earn a profit of five to ten percent of their total revenue annually. Sometimes, the medium trading firms/syndicates earn higher profit than the large ones, particularly when there is higher demand for the produce in the market segments where they operate.

The major risks which traders generally face include (1) delay in supplying the produce to the destinations due to breakdown/accident of trucks, and (2) losses due to perishable nature of the produce. However, the traders do not have any insurance coverage and are not interested to cover up their losses. This is possibly because there is hardly any problem of unsold produce for the traders. Even when there is oversupply, the market is generally cleared. Generally, the traders do not face any significant loss in their business due to their greater bargaining power, as unlike them, the farmers are not organized. As a result, there is considerable difference in price paid to the farmers and that received after trading. This helps the traders to avoid losses even when there is over supply. As a result, they have no incentive for insurance coverage of their business. For the same reason, the traders have no incentive to build cold storage as well.

Factors Affecting Prices

Usually the prices in the wholesale market fluctuate depending on the supply of the produce. There are a few other factors which also influence the market prices. These factors include quality of the produces, networks between the traders, farmers and middlemen, and the time of supply of the produces into the market during a day. When traders have good networks with the farmers and the middlemen, they usually get the produce at a lower price through bargaining and/or contracts. Also, the time of supply of the produce during a day is very important as most of the traders are required to send the collected products to the destination markets by 10 am. This forces them to offer higher prices in the early morning to meet their supply orders in right time, which is very crucial for credibility in markets and also for perishable products like vegetables. On the other hand, prices become lower in the latter half of the day. It may seem that there is scope for bringing in parity in prices throughout the day of trading, particularly by shifting/stretching the trading time in the market and developing storage facilities. But, transactions in the wholesale markets in West Bengal generally start in the early morning as the collected produce are to be sent to various destinations. However, there is a possibility of shifting/stretching the trading span if connectivity between the farm gate and the wholesale market as well as between the wholesale market and the destinations are improved (in addition to development of storage facilities).

Traders' Perceptions about Farming and Trading

According to the traders, it would be beneficial for the farmers and the trading firms if the government provides subsidies on inputs and necessary infrastructure facilities. However, the farmers should form unions/collectives for cultivation of different crops at a higher scale in accordance with the market demand and sharing various risks. Traders are open to trading of any crop if there is enough demand for the same in different markets. For example, green peas are new inclusion in the trading baskets at Haldibari market which can fetch high returns to the traders as well as the farmers. Importantly, the traders did not find any fall in supply of any of the major crops in the recent past. Accordingly, they are of the opinion that sustainability of agricultural intensification is not a major problem in the area.

4 Crop Specific Major Value Chains

Tomato: Cultivation (Farmers and Agricultural Labourers) -> Harvesting (Farmers and Agricultural Labourers) -> Transport to Haldibari Market (Van Owners) -> Sorting of Produces (Workers) -> Packaging (Workers) -> Loading (Workers) -> Transportation to Other Markets (Transporters/Truck Owners)

Chilli: Cultivation (Farmers and Agricultural Labourers) -> Harvesting (Farmers and Family Labour) -> Transport to Haldibari Market (Farmers and Van Owners) -> Packaging (Workers) -> Loading (Workers) -> Transport to Other Markets (Transporters/Truck Owners)

Potato: Cultivation (Farmers and Agricultural Labourers) -> Harvesting (Farmers and Agricultural Labourers) -> Grading (Farmers and Agricultural Labourers) -> Packaging (Farmers and Agricultural Labourers) -> Loading (Agricultural labourers) -> Transport to Cold Storage or Market (Van Owners/Truck Owners and Traders)

Generally women are not involved in transportation, loading or selling of the produces. However, they are involved at the time of cultivation and harvesting, particularly in case of chilli. Hence, expansion of cultivation of chilli may have the potential to make the process of agricultural intensification in the area socially inclusive.

SWOT Analysis of Existing Value-Chains

CROP	STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
POTATO	<ul style="list-style-type: none"> - High demand round the year - Well developed cold storage facility 	<ul style="list-style-type: none"> - Highly risky for marginal farmers due to fluctuation in price - Lack of transparency in distribution of cold storage bonds 	<ul style="list-style-type: none"> - Processing Exports to other states Contract farming 	<ul style="list-style-type: none"> Weather sensitivity Nexus amongst traders
TOMATO	<ul style="list-style-type: none"> High demand for better quality tomato all over India Well-developed marketing chain 	<ul style="list-style-type: none"> No cold storage facility 	<ul style="list-style-type: none"> Processing Contract farming 	<ul style="list-style-type: none"> Diminishing productivity over years
CHILLI	<ul style="list-style-type: none"> Suitable for marginal farmers and women Varieties currently cultivated are not so weather sensitive So far, there is no sign of decrease in productivity. Low risks in respect of crop loss, but high returns vis-à-vis costs of cultivation Lesser possibility of crop wastage due to animal attacks 	<ul style="list-style-type: none"> Existing varieties not suitable for making chilli powder Long duration of harvesting delaying /limiting cultivation of the next crop like jute 	<ul style="list-style-type: none"> Processing of red chilli for powder/pickle Export potential 	<ul style="list-style-type: none"> No significant risks High fluctuations in market price Water logging if sowing is delayed

5 Major Reflections for Value Chain Analysis under SIAGI Project

- While the small and marginal farmers incur losses due to low prices, especially when there is oversupply, traders generally do not face any such problem as they do not have unsold produce. This also means that if farmers are linked with the traders, wastage of production can be minimised.
- If the produce are delivered in the market, farmers can get better prices as compared to when they collect the same from the field. However, in addition to opportunity costs, transportation charges and other transaction costs, the price differential also depends on the scale of farming (hence on size of landholding and/or strength of the collectives). These aspects are very important for the small and marginal farmers. Formation of collectives and development of supply chain are very important in this regard.
- Usually choice of crops made by the farmers depends more on conventions/existing practices rather than the market related factors. If the choices are made considering the market situation, farmers are likely to gain more. The government and non-government agencies can play crucial role in disseminating market related information to the farmers.
- Since there is little scope for the women workforce to be engaged in trading, they should be involved in production and harvest only. Hence, selection of appropriate crops is crucial for promoting socially inclusive agricultural intensification. Emphasis should be given on crops that can be cultivated with higher returns but lower production risks by the small and marginal farmers, and also with engagement of women workforce.
- There is a need for deeper understanding of the factors that create value for the products, and the activities which are there beyond what we traditionally call cultivation and harvest. It is also necessary to explore how women can access additional income when they are engaged only in production and/or harvesting, but are not part of marketing of the produce.

How to take this learning to the study villages

This is a pertinent question for the SIAGI project. There are signs of reflections of these experiences (from Haldibari) in the farming practices at Uttar Chakowakheti. The experiences of Haldibari were shared with the farmers of Uttar Chakowakheti by CHDI in different consultation meetings. The farmers seem to have understood the advantages of cultivation of the crops like chilli, particularly in respect of their suitability for small and marginal farmers, high returns, low risks and scope for engagement of women. Given their realization and being motivated with the experiences from Haldibari, some of the farmers of Uttar Chakowakheti decided to cultivate chilli (along with other vegetables) during this pre-Kharif season with necessary handholding support from CHDI. The need base trainings to the farmers were given by the Department of Agriculture (Government of West Bengal). However, the chilli seed bed was damaged due to hailstorm, but it

gave them good learning opportunity. The farmers have decided to cultivate chilli in next summer with more precautions.

However, these reflections may be tentative. In order to take the learning process further with active participation of community, some selected farmers from Haldibari can be invited to share their experiences with the farmers of Uttar Chakowakheti and Dhaloguri during the course of community engagement in these two villages. Some of the traders can also be invited to discuss the market potentials of different crops. It is expected that such initiatives would give the farmers necessary confidence in farming which is crucial for sustainable agricultural intensification in the area. More importantly, the process of community engagement and outcomes can be documented and community thoughts on the process can be evaluated. This can be an important outcome of the SIAGI project.