



Agribusiness cluster mapping and market intelligence survey

CONCEPT NOTE

BACKGROUND

Bangladesh's agriculture sector has been rapidly shifting from predominantly semi-subsistence farming to commercial agribusiness. This change is taking place despite regular climate-related calamities and the current COVID-19 pandemic. It is Bangladesh's smallholder farmers, who make up 88% of the farming community, that are driving this dynamic shift. Rural youth are working with other farmers to consider the changes in climate and adapt their farming methods and investments accordingly. They are changing cropping patterns, diversifying crops, using appropriate scale technologies and investing in high value agriculture, be it livestock, fisheries, agroforestry or high value crops¹ rather than traditional rice paddy. As a result, high value agriculture clusters are emerging all over Bangladesh—from riverine chars to coastal chars to haor flood plains to the hills.

The clusters are made up of an informally integrated group of enterprises that produce similar products within a specific geographic location. For example, a cluster of mung bean-related enterprises in Patuakhali, cucumber clusters in Ramgati and Charfasson or a pond fish cluster in Mymensingh. Within the cluster the enterprises produce for, or buy or sell from, each other in order to supply products or services to final consumers. Currently, the enterprises involved range from input providers to producers to brokers from the same value chain. As the clusters strengthen, they should also engage financial institutes, processors, packers, transporters, wholesalers and retailers.

More information is needed

Though we have a sense of the different clusters emerging around the country, there is actually no reliable statistical data by which we can assess the magnitude of the products and services that are available in these clusters. In Bangladesh, only the Small and Medium Enterprise (SME) Foundation (under the Ministry of Commerce) has been working with cluster-based or area approach methods. However, their focus is non-farm commodities. There have been no studies to date that focus on the emerging *agribusiness* SME clusters and crop zones. Only the Bangladesh Agricultural Research Council (BARC) has developed crop suitability maps on the basis of the Land Suitability Assessment and Crop Zoning of Bangladesh². This provides basic information for the growing potential of 14 crops showing 'very suitable' and 'suitable' areas. However, there is no information available for potential areas/zoning of livestock and fisheries, despite the fact that Bangladesh has one of the highest cattle densities in the world as well as the fifth position in world aquaculture production (DoF, 2019).

¹ High value crops are defined as crops that have a higher profit margin than high-yielding winter boro rice. They include flowers, fodder, fruits, oilseeds, pulses, spices and vegetables.

² <http://cropzoning.barcapps.gov.bd/homes/intro>

Common challenges, a common solution

The apex producer organization (PO) Sara Bangla Krishak Society (SBKS) has brought to our attention that these clusters face many similar challenges—lack of access to information, markets, appropriate scale technologies and finance. Seasonal glut further impedes the growth of these clusters as it leads to market distortion and post-harvest loss, resulting in low income for farmers.

To address these challenges, smallholder farmers of these emerging agribusiness clusters should consider mobilizing themselves into commodity-based POs (CBPOs). Like this, SBKS and CBPOs can pool their resources and knowledge as well as manage their product surpluses and value chain activities in collaboration. This will allow them better access to inputs, finance, technology and markets, as well as a stronger bargaining position, leading to better prices for farmers. They will be able to provide agribusiness services to their members with greater outreach and effect greater influence throughout the commodity's value chain. They will even be able to facilitate contract farming with seed companies, exporters, processors, etc. linking national commercial banks (NCBs) under new financing scheme of Bangladesh Bank³. They will be able to stimulate investment in food safety, accreditation and post-harvest loss prevention through proper transport, handling, cold chain management, storage and processing ventures. Further, agricultural diversification, commercialization and mechanization should be applied in the clusters in an integrated way.

The institutionalization of these clusters will require robust support from existing POs in Bangladesh, relevant private sector actors, government extension agencies and development partners.

Mainstreaming FAO's work with producer organizations

Since mid-2018, FAO Bangladesh has been implementing the project *Increasing Access to Finance for Farmers' Organizations in Bangladesh*. It is financed by the Missing Middle Initiative (MMI) of the Global Agriculture Food Security Program (GAFSP) in collaboration with the Ministry of Agriculture and Sara Bangla Krishak Society (SBKS) – the apex body of 55 POs. The project's aim is to increase the capacity of POs so that they can provide need-based support to their members. MMI's initial efforts were to ensure that the POs themselves were strong and inclusive institutions. Significant time was spent to develop the leadership, good governance, accountability, networking, negotiation skills and confidence of POs and their leaders. This laid a solid foundation upon which business planning and investment in both common facility centers and individual farmer ventures are now taking place. POs have revolving loan funds in place to support these initiatives and are working in partnership with private sector actors along their respective value chains.

After two and half years of successful strengthening of these 55 POs and their apex, the MMI project steering committee, which is chaired by the Secretary of the Ministry of Agriculture, gave guidance that FAO mainstream the MMI approach for mobilizing smallholders into commodity-based POs across the country.

³ The Central Bank of Bangladesh, through its 'Agriculture and Rural Credit Policy – FY 2020-2021', has endorsed a 'contract farming financing scheme'. Under this model, the Bank will provide loans to large companies as a wholesale loan (e.g. large processor, exporter, seed company, and retail chain shop) to retail it among their contract growers (group or individual growers) at maximum interest of 9% calculated using the reducing balance method.

Following this guidance from the Ministry, FAO-MMI has conducted a series of brainstorming discussions with SBKS leaders, MMI government focal points and major private sector actors. All agreed that an **agribusiness cluster mapping and market intelligence survey** should be the next step to gather the information needed to mainstream the MMI approach in a way that would be most beneficial to smallholders. The results will help to prioritize major clusters, patterns and commodities in order to identify which smallholder farmers may wish to organize themselves into POs. Also, survey results will be used for designing proposed PO-led project – if awarded from GAFSP in December 2021.

SURVEY THEMES

The survey will gather information on a variety of themes in order to properly assess the lay of the land and understand where and what type of further interventions are needed.

Commercialization and competitiveness

Although agribusiness clusters have been promoting commercialization in agriculture and contributing to the country's food security and nutrition, managing marketable surpluses of cluster commodities, especially during seasonal glut, poses a challenge for smallholders. Poor post-harvest handling, lack of cold/dry chain facilities and lack of secondary or tertiary processing trigger smallholders to sell their produce at lower prices. Further, information on cluster commodities, seasonality, market arrival time/frequency, quantities, varieties and the flow of products from primary to secondary and tertiary assemble markets (*Arat*) is not readily available for exporters, large traders, urban *Arats* and processors. The survey aims to establish a broad database and deploy an accessible digital platform for actors along the respective value chains.

Diversification

The agribusiness clusters have been leading a significant shift from rice-led growth to high value agricultural farming. Some clusters include crop, horticulture, livestock, fish and agroforestry in an integrated farming approach. Crop rotation and diversification are two critical agronomic practices in these clusters that play a significant role in improving soil conditions, water quality, weed management and plant protection systems and biodiversity. The survey must clearly explain the multifaceted benefits of diversification. They are key for responsible agricultural investment to avoid monocropping. Such diversification would be both horizontal (production) and vertical (value addition). Crop rotation, local germplasm restoration and other decision would be based on climate, market, infrastructure, soil etc. The survey will analyze these approaches and provide inspiration for researchers, extensionists and farmers interested in developing healthy ecosystems in agriculture.

Mechanization

Mechanical innovations are generally costly and beyond the reach of individual family farms. Community and commodity-based investment in appropriate scale machinery makes it possible for smallholders to access these helpful innovations. Over the last three years, the MMI project has shown how PO-led agricultural machinery rental service centers can ensure access of smallholders to mechanization and reduce production costs. Thus, a Farm Power Needs Assessment (FPNA) in major clusters will explore what sort of innovative investment is required to improve smallholders' access to mechanization.

Information, Innovation and Investment

Information, innovation and investment are crucial for the competitiveness of any commodity cluster. Smallholder farmers that are transforming farming practices from semi-subsistence to commercial ventures in such clusters need access to information technology to be able to make informed decisions about inputs, technology, finance and markets. Digital agriculture is key here. And while Bangladesh is one of the most advanced countries in terms of mobile phone subscribers, smallholder producers are still not able to get timely, relevant information regarding finance, technology and markets. Innovation and responsible investment in clusters are also needed in order to reduce production costs, and improve safe food production, value chain linkage promotion and financial inclusion for youth farmers. The survey will conduct a cluster needs assessment on these *Three I's* for the benefit of policy makers, extensionists, private sector actors and investors that wish to work with these clusters.

Climate resilience and market considerations

Bangladesh is one of the most climatically fragile countries in the world. It is situated at the end of the delta formed by the Ganges, Brahmaputra, and Meghna river systems. Monsoon flooding is an ongoing phenomenon. At the same time, the funnel-shaped northern portion of the Bay of Bengal exposes the country to cyclonic landfalls every year. Rising sea levels, salinity intrusion, tidal and monsoon floods, river erosion and hill slides are climatic events regularly faced by farmers. Major climatic hotspots are haors, riverine chars, hills and coastal basins. However, despite intense climatic pressures, in recent decades these have emerged as potential areas for farming of high value agriculture. In haor, char and coastal areas, smallholder farmers have only two economic seasons: monsoon for fishing, and dry for cropping or crop-livestock. These areas have distinct agro-climatic features and farmers have adopted mitigation measures in order to continue farming.

In addition to addressing climatic pressures, farmers in these clusters must know how to manage marketable surpluses, seasonality, and contribute to the further development of supply and value chains of commodities. They should bring market considerations, such as transport availability, into their crop calendars. They must also build upon local, traditional knowledge to integrate themselves into the broader market.

The survey aims to understand the climate situation and market challenges in various clusters in order to propose or share already available solutions.

Producer Organizations

Key for the integrated management of farm activities, POs allow smallholders to have a voice and power that they would not have on their own. The survey will identify and assess existing POs as well as identify the scope for mobilization of smallholders within existing clusters into new organizations.

SURVEY DETAILS

This section outlines the more specific questions that will be covered during the survey related to the themes above and some more general information. The survey will:

- Map major agribusiness clusters (high value crops⁴, livestock, fisheries and agro-forestry) across the country.
- At each high value crop (HVC) cluster:
 - identify HVC clusters considering agro-edaphic⁵ and agro-climatic factors;
 - estimate acreage of HVC clusters;
 - identify varieties/species;
 - illustrate crop calendar/seasonality and cropping pattern/farming pattern by HVC;
 - assess yield of identified commodities in each cluster.
- At each livestock cluster:
 - estimate the population of livestock and poultry and the farming pattern (intensive, semi/scavenging) used;
 - identify species/breed;
 - assess yield of milk/meat and seasonality by species/breed;
 - identify processing facilities.
- At each fisheries cluster:
 - identify the number of ponds/watershed areas and farming patterns (culture/capture);
 - identify species;
 - assess yield and seasonality by species;
 - identify processing facilities.
- At each agro-forestry cluster (only medicinal crops/honey):
 - estimate acreage of medicinal crops;
 - identify varieties/species;
 - illustrate crop calendar/seasonality and cropping pattern/farming pattern;
 - assess yield of identified commodities in each cluster.
- At each cluster, map the main actors from farm to fork and the flow of inputs, outputs and money/capital.
- Assess women's involvement/gender parity in each cluster.
- Draw a historic timeline of each cluster (covering at least the last 20 years), who introduced specific commodities first, the yearly trend of increasing acreage, variety development and technology adoption trend.
- Assess export and domestic market potentials of each cluster, listing current and potential buyers whenever possible.
- Assess challenges associated with agronomy, soil, crop protection, harvest, post-harvest processing, marketing practices and identify participatory mitigation measures of identified challenges in each cluster.
- Assess climatic and human-induced pressures on natural resources in each cluster.
- Map growth centers/primary/secondary/tertiary assemble markets within each cluster.

⁴ High value crops are defined as crops that have a higher profit margin than high-yielding winter boro rice. They include flowers, fodder, fruits, oilseeds, pulses, spices and vegetables.

⁵ BARC crop zoning apps list 11 agro-edaphic factors for land suitability analysis: **Soil**: (i) Soil Permeability, (ii) Effective Soil Depth, (iii) Available Soil Moisture, (iv) Nutrient Status, (v) Soil Reaction (pH), (vi) Soil Salinity, (vii) Soil Consistency, (viii) Drainage; **Inundation**: (ix) Depth of inundation, (x) Flood hazards; and **Landform**: (xi) Slope.

- Estimate daily/seasonal market arrivals of commodities in identified markets, including the timing/interval/frequency of arrival.
- Prepare a seasonal market arrival calendar of each market.
- Conduct a cluster need assessment (CNA) on information, innovation and investments (3Is).
- Identify any commodity-based PO(s)/coops that already exist in each cluster and assess their capacity using MMI performance assessment tools.
- Recommend which major clusters could benefit from adopting the MMI approach and map out possible innovative solutions to make these clusters competitive.

Methods and Materials:

The survey will adopt both a quantitative and qualitative approach for data collection at different tiers (urban, peri-urban, rural, cluster). The survey aims to collect data precisely and efficiently, with minimum disturbance to the respondents, but ensuring that the respondents are comfortable and inspired to respond honestly and spontaneously. As such, **Statistical Survey (SS) and Rapid Reconnaissance Survey (RSS) techniques** will be used to conduct the inventory of clusters and markets including the identification of potential major clusters.

Questionnaires with both open and closed questions will be used. All instruments will be translated into Bengali and a digital version will be developed so that FBFs can easily gather information using the **.collect** mobile app.

The Survey Team

As this survey involves both primary and secondary data collection, four survey teams will be deployed country wide as follows:

Team 1, for consultation with Government and the private sector, consists of SBKS leaders and the FAO-MMI Implementation Support Unit. They will consult with the Ministry of Agriculture, Ministry of Fisheries and Livestock, extension agencies, business chambers, exporter and agro-processor associations, as well as other private sector actors. This team will also work with the control room of the Government extension agencies to gather information on district/upazila-wise HVC acreage, pond and water shed information, livestock population and markets. This information will allow the other teams to identify clusters according to acreage/watershed/pond/livestock population.

Team 2, for urban Arat survey, consists of champion FBFs and the MMI team. This team will map urban wholesale (Arat) markets in all eight divisions as well as their downstream collection points (cluster, primary, secondary or hub markets at district, upazila, hub level). Using a snow-ball technique, an urban Arat survey will guide the team to identify major clusters and rural market hubs. This will help Team 3 identify some major commodity clusters. Team 2 will also investigate from where processing companies collect raw products as well as their future plans for expansion and willingness/interest to link with new clusters.

Team 3, for cluster and primary market survey, consists of FBFs working in pairs of one male and one female. This team will identify clusters and nearby primary assembly markets, conduct surveys with cluster farmers and market committees. They will also collect secondary information from district level offices of Department of Agricultural Marketing, Department of Agricultural Extension, Department of

Livestock Services, Department of Fisheries and Bangladesh Agricultural Development Corporation regarding the respective clusters.

Team 4, for instruments, apps, data collection, analysis, reporting and GIS mapping, consists of MMI M&E and GIS experts and associates. They will work with the other three teams to develop survey instruments and provide training and guidance regarding the information to be collected. They will also prepare survey apps and maps.

Selection and Training of Cluster Investigators (CIs)

MMI has already developed the capacity of 20 Farmer Business Facilitators (8 are women) on M&E and data collection using the *.collect* mobile app. These 20 Farmer Business Facilitators (FBFs) are working in different regions on behalf of SBKS. They have also developed at least 110 additional FBFs, 2 in each PO. Since the survey will be conducted countrywide and at different levels, SBKS will nominate 16 champion FBFs (both male and female) to work with Team 2 and 32 FBFs for Team 3. All the teams will be coordinated by the MMI ISU coordinator and the SBKS General Secretary. All team members will be given **three days of training** on different aspects of the proposed survey.

The training programme will include the following:

- *objectives, purpose and scope of the proposed survey and the role of Cluster Investigators;*
- *definition of survey terms provided in a manual detailing the relevant aspects of the survey instruments;*
- *data requirements: the type and intensity of data required; the schedule of data collection, how the data items are interrelated and what constitutes a complete data set;*
- *responsibilities and ethical practices of the survey team;*
- *specialized skills including estimation of acreage and yield, market arrival and livestock population;*
- *how to follow the FAO COVID-19 health protocols during the survey.*

In addition to MMI's own resource personnel, government focal points for MMI and representatives from the Department of Agricultural Marketing will be engaged to impart training to the survey teams. All team members will travel to at least 2 locations for field training, practicing to interview respondents.

SURVEY PLAN—Itinerary of Cluster Investigators (CIs)

Once team 1 and team 2 have collected a complete set of data (district/upazila-wise HVC acreage/livestock population/fish farm population) and an inventory of major *Arats* (wholesale markets) and their downstream markets/hubs, team 3 will begin the final cluster survey.

Considering the current wave of COVID-19, Team 1 will begin their work virtually with extension agencies and Team 2 can collect information over the phone through their contacts with urban/divisional/metropolitan *Arats*. When the situation improves and more freedom of movement is allowed, the assigned tasks for Team 1 and Team 2 can be completed within two weeks. A further one week will be needed for analysis. During this time, the MMI ISU and SBKS will prepare guidelines and a detailed survey plan for Teams 3 and 4.

The detailed cluster survey should be conducted within one month, with another month planned for analyzing data and preparing reporting formats and maps. Thus, a total of three months will be dedicated for the completion of report.