**Highway Restaurant based Agro-Entrepreneurship development - A case study of Sherpur upazila, Bogra district**

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**Abstract**

Role of agriculture in Bangladesh economy is declining although there has been a growing demand of vegetation products in urban areas. However, there is a direct link between the rural development and the development of agro-based economy as about 78% people live in the rural areas, where agriculture is the primary occupation. With the overall situation taken into account, a ‘Social Business Model’ approach is explored to create a sustainable enterprise centering a highway restaurant, which would be a locally run mechanism linking farmers and urban and other consumers. The idea of this project is marketing of agricultural and cottage products of the study village in nearby highway restaurant. The study area chosen is in Sherpur upazila of Bogra district where there are two highway restaurants. Two types of people are surveyed: restaurant owners and agricultural practitioners. Focus group discussion, key informant interview and questionnaire survey methods have been used for this study. Different data are collected with information on willingness to invest in the project, present market conditions, demand and supply chain, product quality and quantity, overall condition of the site, and people’s ability to pay in the project. With these data in hand, analysis is done to know the potential of highway restaurant based agro-entrepreneurship development. As the villagers are willing to work with this project, this project is very well sustainable. After evaluation of data, a comparison is made between anticipated market approach and current market approach. Project viability is checked with some research questions in hand with respect to Social Business Model. After two years this project will be self-sustaining. All the stakeholders of the production-supply chain – farmers, restaurants and the community based organization (CBO) of the project would be profited from it. The project is replicable in villages nearby Highway restaurants.

**Key words**: Rural Development, Social Business Model, Agriculture, Agro-Based Economy, Highway Restaurant

# Introduction

The economy of Bangladesh is based on agriculture. When the question of development arises in this society, the question of rural development comes automatically. Bangladesh has a population of 140 million people; more than 80 percent of them, or approximately 15 million households, are located in rural areas. The percentage of urban population in 22%, while rest of the population is concentrated in over 86,000 villages in the country (Ministry of Education, n.d.). The rural sectors contribute about two-thirds of the GDP (Islam, n.d.).

Rural development connotes overall development of rural areas with a view to improve the quality of life rural people. Social business is an effective tool for rural development in developing countries like Bangladesh. A social business is aimed at being self-sustainable and serving a social goal at the same time (Yunus, 2007). The idea of this project is marketing of agricultural and cottage products of the ‘Bit-Khoir’ village of Sherpur Upazilla of Bogra district in nearby highway restaurant and urban markets. The village would provide the restaurant with necessary agricultural products and the restaurant would support the village by creating direct marketing place and also by providing more job opportunities for village people. This way, both sides can meet their needs easily and cost-effectively. This would create a self-sustainable business model for the development of the rural people. The business model is based on two objectives, one is to maximize the utilization of potentials of selected villages through social business and increase income and employment opportunities, second is to provide an efficient supply chain for the agro-based products and cottage products through highway based restaurant and urban markets.

The idea of the project is to form a community based organization (CBO) which will create marketing opportunities for village products by making a supply agreement with highway restaurants. The products include both agro-based and cottage products. Villages produce plenty of rice, vegetables, fruits, and fish etc. which often remain surplus. These can be used as ingredients for the meals prepared in the highway restaurants. Highway restaurants are lucrative market for village products as they are generally situated close to the villages. The CBO will be formed with representatives from the village and it will authorize and supervise the whole project. The community will encourage well-off people of the villages to invest in this project. The investors would get full return with marginal profit in monthly basis. Remaining portion of the capital will be taken as loan from Krishi Bank. The profit gained from the project would be used to repay the loans. The organization will make an agreement with the restaurant about the supply chain. It will provide better quality seeds, fertilizer and training to the villagers to increase production.

This project addresses the problems in agricultural and cottage sector in our country in rural perspective. Following through the guideline given in the project, a sustainable model can be made taking rural development into account. One can also learn about present market conditions and traits that hampers the production in rural areas. Public participation and community based approach, different market attributes, local market traits and trends, and the framework for a sustainable Social Business Model can be found in this research. But there are some limitations of the study. Rural development is a multifaceted concept covering all the aspects of rural life like health, hygiene, education etc. this project is focused only on the marketing of village products and thus increasing the income level of rural people and creating more employment opportunities for them. But it does not cover all the aspects of rural life. The research has taken one village as a model. But the other villages surrounding it had also potentials which were not taken into account. This study has been conducted based on one area. It might not be feasible for other areas.

**2. Methodology**

**2.1. Literature Review**

A number of related laws, policies and previous studies were reviewed in order to learn from their experiences. A social business is aimed at being self-sustainable and serving a social goal at the same time, with the motto of “No Loss, No dividends” (Yunus, 2007).

***2.1.1. Literature Review of Policies***

“The Agricultural Produce Markets Regulation (Amendment) Ordinance, 1985” states that here would be a Market Advisory Committee which would advise the director of Department of Agricultural Marketing in the matter of fixation of market charges for different kinds of agricultural produce and also in the matter of improvement of markets (Ministry of Law, Justice and Parliamentary Affairs, 1985). According to “Agriculture Policy 2013”, unused cultivable lands will be brought under cultivation to increase the productivity. Government will encourage and help farmers; associations or organizations by making high quality seeds, fertilizers, pesticides more available to them. Government will take initiatives and also encourage non-government initiatives to build storage for agricultural products (Ministry of Agriculture, 2013). According to “Agricultural and Rural Credit Policy and Programme for the FY 2014-2015”, three sectors would get priority in getting loan – crops, fisheries and livestock cultivation. Farmers will get loan at 4% simple interest rate. Only real farmers would get this loan and women will get priority. The loan will be given for up to 15 bigha cultivable land (for potatoes and sugarcane, it will be 2.5 acres). A loan of up to Tk. 1.5 lakh will need no inquiry. Mortgage for loan for cultivable land up to 5 acres is that land (Bangladesh Bank, 2014).

***2.1.2. Case Studies***

Mercy Charitable Foundation: Mercy Charitable Foundation has established a restaurant, the ingredients of which are supplied from a farm it has invested in. The profits gained from the restaurant are used to support a hunger relief program, train clients, provide jobs to them and also to generate income for the nonprofit’s operations (Alter, 2002).

Integrated Farmer’s Association of Heshuiping Region (IFAH): In April 2008, a strategic partnership was formed among the Chinese Academy of Social Sciences Social Policy Research Center, China Youth Development Foundation, Bright China Group and China Social Entrepreneur Foundation. This association also established stable sales channels for agriculture products and ensured entering of smallholder farmers into the agricultural value chain. It offered loans and agriculture supplies at lower prices to the farmers (Global Institute For Tomorrow, 2014).

**2.2. Selection of Study Area**

The study is related to supply the necessary products in highway restaurant, so villages near highway restaurant should be selected. For convenience, Bit Khoir village near Bogra-Sherpur highway in Shimabari Union (Ward No. 8), Sherpur Upazilla, Bogra has been finalized as the study area as it is just 1.5 km from the selected highway restaurants “Food Village” and “Pentagon”. There are two restaurants adjacent to each other. So it is beneficiary for the project to target both the restaurants. As a result, this project will be able to market more products in less cost. One of the selected restaurants (Food Village) has branch in Sirajganj, which is just 26 km from the study area. So the project can easily expand to Sirajganj in future.

Highway restaurants are location specific. There are highway restaurants in Sirajganj, Sherpur Upazila of Bogra, Daudkandi of Comilla, Amirabad of Chittagong etc. Buses going to North Bengal have to stop at Sirajganj or Sherpur. Moreover, these selected restaurants serve most of the buses going to North Bengal. They attract a lot of customers daily, generally more than other place. So it is also advantageous for the project to flourish. From focus group discussion, it has been come to know that among the villages of Shaimabari Union, Bit Khoir village has the highest production rate. So this village can serve the high demand of the restaurants.

***2.2.1. Study Area Profile of Producer Side***

Distance of the village from Bogra Sadar is 33.8 km and it is 36 km away from Sirajganj Sadar Upazila. The village has a total number of 2200 voters. It has around 450 households. Average household size is 4.06 (Bangladesh Bureau of Statistics [BBS], 2011). It has an area of about 2.19 square km (BBS, 2014). Maximum people of the village are farmers. There are also cottage workers, fisherman, shopkeeper, van puller, day laborer etc. There is access to microcredit loans offered by the Grameen Bank. This village is faced with the problem of out migration and high unemployment rate. 40% of the youth are unemployed; among them 25 % are educated unemployed.

There are three community-based organizations in the village- The ‘Krishok Shomobaya Shomiti’, two organization of ‘Sharbik Gram Unnoyan’. These organizations have 60 members each. ‘Krishok Shomobaya Shomiti’ is mainly concerned with the agricultural development of the village. Government initiated ‘Ekti Bari Ekti Khamar Prakalpya’ is running in the village. Members of the organizations give a monthly fee of Tk. 200.

Production Scenario: The primary crop of this village is paddy. Villagers cultivate rice two times a year. Other than this they also cultivate vegetables, nursery plants and jute. There are 22 ponds in this village. All the ponds are leased to one person (the respondent fish cultivator). There are mainly two types of farmers-leaseholder and landowner. Farmers who have less own land also lease land of others for cultivation purpose. A cottage industry based on ‘Chon’ Products is also flourishing in the village. There are around 50 trained women who are engaged in this kind of work. An entrepreneur has trained them for his business. A poultry farm exists in the village, but it is currently not running. There is also a dairy farm run by Abdur Rashid (the respondent dairy farmer). It has been a successful model and he won national gold medal for cow bearing. People around the village are trying to establish dairy farms taking inspiration from his model.

Marketing Facilities: There is a local bazar named ‘Chandaigona Bazar’ 1 km away from the village. There is a hat at Dhunot Upazila, which is 8 km away. Farmers mainly sell their product in these markets. The Sherpur bazar is 14 km away from the village. There is also a formalin free market at Majhira, which is 11 km away. A storage facility is situated near the Shimabari Union Parishad Office 0.5 km away from the village.

***2.2.2. Study Area Profile of Consumer Side***

For the project, two highway restaurants were surveyed named Food Village and Pentagon at Shimabri Union, Sherpur Upazila by the Sherpur-Bogra Highway. It is 32 km from Bogra Sadar and 26 km from Sirajganj Sadar. Buses going to North Bengal (Bogra, Naogaon, Rangpur etc.) from Dhaka take a break of about 20 minutes at these restaurants. Restaurants have their own agreement with different bus companies. Food Village and Pentagon were established in 2011 and 2012 respectively. Food village has one other branch at Sirajganj, which was established in 2013.

**2.3. Data Collection**

***2.3.1. Primary Data Collection***

Consumer side: Primary data of the consumer side has been collected through expert interview. For this, deputy general manager of Food village and owner of Pentagon restaurants have been interviewed. Some traders of urban market have also been consulted. An organization of cottage marketing named WEAB has also been surveyed. The group has also discussed with highway bus companies which stop at these selected highway restaurants for better understanding.

Producer side: Primary data of the producer side has been collected through questionnaire survey, focus group discussion and transit walk. Focus group discussion was conducted at Shimabari Union Parishad Office in presence of the Chairman, members of two wards, a high school teacher, an owner of dairy farm, a fish dealer and leaseholder of ponds and some common villagers. Information about total household number of the village, migration and unemployment rate, community facilities, total cultivable land, main agricultural and cottage products, community organizations, availability of loans and willingness to collaborate with the project-these issues were reviewed in the focus group discussion. Transportation network, road condition, available mode of transport, housing condition, condition of farms and distance of nearest bazar etc. were revealed through transit walk. A draft map of village was drawn during the transit walk.

Sample Size and Sampling Method (Producer Side): Sample size has been determined using the following formula-

Sample Size, ss = Z2\*(p)\*(1-p)/ c2

Where, Z = Z value (e.g. 1.96 for 95% confidence level)

p = percentage picking a choice, expressed as decimal (0.5 used for sample size needed)

c = confidence interval, expressed as decimal (Creative Research Systems, n.d).

A sample size of 39 households is selected with 95% confidence level and confidence interval of 15 using the sample size calculator (Creative Research Systems, n.d). But for time and manpower constraint 27 households were surveyed. Stratified sampling system has been followed to conduct the survey among the 450 households. Various categories of villagers such as farmers (landholder and leaseholder), fisherman, cattle bearer, nursery producer, craftsman etc. were considered for this survey. The smaller number of sample households can be justified as the survey group classified the households according to their occupation. Among the respondents there were 20 farmers both leaseholder and landowner engaged in rice and vegetables production, three nursery farmers, one fish cultivator, one dairy farmer and two cottage workers. In the village all the pond are leased by one person, so the group surveyed him as the representative of fish cultivators. Besides, there is one national gold medallist dairy farmer who was surveyed. In this village, there are two women leaders of cottage workers who were also surveyed.

***2.3.2. Secondary Data Collection***

Physical features of the study have been collected from Map and Internet. Information about cottage industry of the study area are collected from BSCIC and SME foundation. Data on different handicraft products and their market condition in both urban and rural areas were also collected.

**3. Results**

For this study, expert interview, questionnaire based survey and focus group discussion were conducted for data collection from both consumer and producer side. Deputy General Manager of Food Village and owner of Pentagon were interviewed from consumer side and data of producer side was collected through questionnaire based stratified sample survey and focus group discussion on twenty-seven villagers of Bit Khoir village who were selected by a key informative person of that village.

**3.1 Consumer Side Analysis**

Food Village and Pentagon attract around 10,000 and 3000 customers daily respectively, which becomes double during Eid or other festivals. The restaurants need various items, which they get supplies on various supply basis, which is represented in table 1. Restaurants have their own storage facilities, which facilitate them to accommodate surplus products.

Table 1: Demand of various products and supply basis in the restaurants

|  |  |  |  |
| --- | --- | --- | --- |
| Items | Daily need of Food Village (in kg) | Daily need of Pentagon (in kg) | Supply basis |
| Rice | 400 | 150 | Every 10 days |
| Flour | 150 | 74 | Every 10 days |
| Oil | 70 | 60 | Weekly  |
| Beef | 220 | 80 | Daily |
| Chicken | 100 | 30 | Daily |
| Vegetables | 280 | 100 | Daily |
| Fish | 80 | 30 | Daily |
| Spice | 6 | 5 | Weekly |
| Milk | 320 | 120 | Daily |
| Pulse | 5 | 5 | Weekly |
| Egg (pcs) | 800 | 500 | Daily |
| Mutton | 25 | 10 | Daily |

Source: Field survey, 2014

The restaurants generally have two to three suppliers for each product to mitigate the risk. Suppliers have to make an agreement with some deposit money of about Tk. 1 to 2 lakh. The survey revealed that if one supplier can supply several products, deposit money would be around Tk. 2 to 3 lakh for all the products.

The interviewees were asked about problems faced in present supply chain considering five problems. The interviewees made the priority ranking among the problems, where 1 means the highest and 5 means the lowest priority. Weighted average ranking method is used to show the relative priority among the problems (table 2).

Table 2: Weighted average ranking of problems faced by restaurants in current supply chain

| Factors | Priority ranking | Average Ranking |
| --- | --- | --- |
| 1 | 2 | 3 | 4 | 5 |
| Low quality of product | 0 | 0 | 1 | 0 | 1 | 0.53 |
| Delay in supply | 0 | 1 | 1 | 0 | 0 | 0.33 |
| Difficulty to manage numerous suppliers | 2 | 0 | 0 | 0 | 0 | 0.13 |
| High price of products | 0 | 1 | 0 | 1 | 0 | 0.4 |
| Unpredicted cause (strike or accident) | 0 | 0 | 0 | 1 | 1 | 0.6 |

Source: Field survey, 2014

In priority ranking, the lowest value indicates the highest priority. So, the most important three problems faced by the restaurants are difficulty to manage numerous suppliers, delay in supply and high price of products.

On the other hand, Pentagon has a plan to expand the restaurant in future. It is in need of skilled manpower and is planning to improve the service quality. Food Village has no plan of further expansion.

**3.2 Producer Side Analysis**

***3.2.1 Socio-economic Profile***

Of the sample population taken, 92.5% are male as male populations are mainly engaged in farming. Rests 7.5% of the sample are female engaged in cottage work. 70.37% people are aging from 45 to 55 years and maximum respondents (44.44%) have primary education. 72% of the respondents have monthly income ranging from Tk. 3000 to 15000 and 74% of the respondents have gross monthly household income within Tk. 18000.

***3.2.2 Present Production Scenario***

Among the twenty-seven respondents, there were twenty paddy or vegetable producers, three nursery farmers, one fish cultivator, one dairy farmer and two cottage workers. Some village women got training on making cottage products from an entrepreneur. They produce basket and various decorative elements from ‘chon’ according to the order they get.

There are three types of farmers in Bit Khoir village- landowner (37.5%), leaseholder (45.8%) and both (16.7%). 70.8% of the farmers are engaged in cultivation for nine months in a year. Majority of the farmers of the village are leaseholders and among them 72.7 % are engaged in cultivation for nine months in a year. According to classification of poor, 48% of the respondents of the village are extreme poor.



Figure 1: Amount of land owned (in bigha) (1 bigha= 33 decimal)

Source: Field survey, 2014

There is a weak positive correlation between total cultivable land and amount of profit, because all of the farmers cannot avail different types of inputs-high quality seed, pesticide, fertilizers, agricultural instrument and loan. On an average, only 35.65% farmers can avail the inputs.

Weighted average ranking method is also used to show the relative priority among the problems faced by the farmers during production, which were revealed from the questionnaire survey. The most important three problems faced by the farmers are lack of own land, defiant weather/ outbreak of disease and lack of loan (table 3).

Table 3: Weighted average ranking of problems faced by the farmers in production

|  |  |  |
| --- | --- | --- |
| Factors | Priority ranking | Average ranking |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Lack of loan | 4 | 6 | 2 | 3 | 5 | 2 | 3 | 3.29 |
| Declining productivity due to land subdivision | 0 | 3 | 1 | 4 | 2 | 3 | 12 | 4.89 |
| Lack of own land | 8 | 4 | 7 | 2 | 3 | 1 | 0 | 2.36 |
| Absence of skilled manpower | 0 | 1 | 1 | 6 | 6 | 5 | 6 | 4.68 |
| High cost of production | 3 | 1 | 5 | 5 | 3 | 6 | 2 | 3.75 |
| Scarcity of raw material | 4 | 2 | 5 | 3 | 3 | 6 | 2 | 3.57 |
| Defiant weather/ outbreak of disease | 6 | 8 | 4 | 2 | 3 | 2 | 0 | 2.46 |

Source: Field survey, 2014

***3.2.3 Present Marketing Scenario***

74.07% of the respondents sell their products at Chandaigona Bazar, Shimabari Union that is one kilometer away from the village. Among the rest, the fish cultivator and the dairy farmer sell their products at Sirajganj Sadar. Nursery products are sold directly to various consumers from the village. The entrepreneur who trained the cottage workers exports the cottage products.

59.26% of the respondents are not satisfied with their current marketing situation because of insufficient profit. A comparison between profits earned from products and involvement of farmers shows that per bigha (1 bigha = 33 decimal) profit is highest for vegetables but involvement is less, as vegetable production is risky due to insect problem or outbreak of diseases. Storing of vegetables also seems problematic to farmers. Involvement in fish cultivation is very low as all the ponds of the village are leased to one fish cultivator.

A weighted average ranking method is used to show the relative priority among the factors, which influence the marketing of products.

Table 4: Weighted average ranking of influential factors in marketing

| Factors | Priority ranking | Average ranking |
| --- | --- | --- |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Transport cost | 4 | 6 | 2 | 3 | 5 | 3 | 2 | 3.25 |
| Available mode of transport | 1 | 3 | 1 | 4 | 2 | 3 | 11 | 4.68 |
| Quantity demanded of the product | 9 | 4 | 7 | 2 | 3 | 0 | 0 | 2.18 |
| Road condition | 1 | 1 | 1 | 6 | 6 | 5 | 5 | 4.46 |
| Storage facility for the product | 3 | 1 | 5 | 5 | 3 | 6 | 2 | 3.75 |
| Presence of middlemen | 4 | 2 | 5 | 2 | 2 | 6 | 2 | 3.57 |
| Distance of market | 3 | 8 | 4 | 2 | 3 | 2 | 3 | 3.11 |

Source: Field survey, 2014

**3.3 Project Related Analysis**

The restaurants have agreed to make supply agreements with the project initiators if the project can reduce their current problems in supply chain. The community organization formed by the project would supply various products on its own at low price than current suppliers.

The two highway restaurants have demand for numerous products. But the selected village produces only some of the demanded products – rice, vegetables, dairy and fish. Present production amount of respondents and the quantity demanded in the restaurants are shown in figure 2.



Figure 2: Comparison of present amount of production and quantity demanded in restaurants

Source: Field survey, 2014

There is surplus of rice and fish but deficiency in the amount of vegetables and dairy, though vegetables are most profitable products for farmers (profit/cost ratio of vegetable is 4) (Field survey, 2014). Most of the farmers are ignorant of proper marketing opportunities and their tendency to follow the footprints of their previous generations and continue producing products without considering the relative profitability. Field survey revealed that if marketing of vegetables can be ensured, they are willing to switch some land from rice to vegetable production.

From the field survey, it has been come to know that maximum farmers cannot use all their lands for cultivation due to lack of investment money. But they are willing to increase production if the investment money can be assured.

There is a dairy farmer in the village who won national gold medal for cow bearing and milk production. He alone produces about 90% of the dairy products of that village. He is willing to increase his production as well as train others. Other villagers can be given incentives for this. This way, quantity demanded vegetables and milk could also be met.

The survey revealed that farmers who can avail the agricultural inputs are more willing to increase their production. Besides, 70.8% of the farmers are willing to increase production, and among them 33.3 % are landowners, 25% are leaseholders and 12.5% are both- landowner and leaseholder. On the other hand, 70.8% of respondents have scope of increasing production. Maximum of the villagers (66.7%) have cultivable land of 3 to 8 bigha, and among them, 87.5% are willing to increase production.

The fish cultivator is willing to supply the quantity demanded by this project, as it would decrease his transportation cost. Increasing vegetable production would increase the demand of nursery products. This would create backward linkage for nursery.

As vegetables are seasonal product, which has to be supplied in daily basis, storage facility will be needed. Storage facility is also required for fish as it is perishable. Focus group discussion revealed that there is available storage facility near Shimabari Union Parishad, which is 0.5 km away from the village. Rent of the storage is Tk. 10 per sq. ft. and required deposit money is Tk. 50,000.

Some village women got training on making cottage products from an entrepreneur. They now produce basket and various decorative elements from ‘chon’ according to the order they get. Field survey revealed that the village women are willing to make more products if they get order from the project.

To sell the cottage products, a shop would be needed. There are some small shops in Food Village selling different types of cottage or confectionary products. There is space for rent in both of the restaurants. The rent of a 180 sq. ft. space is about Tk. 3000 per month. Deposit money required for renting a space is around Tk. 50,000. These products would be sold in a shop in one of the highway restaurants (Pentagon) where there is no other competitors now. With expansion of the project, cottage products would be brought to WEAB, a specialized chain shop for cottage products in Dhaka.

Unemployed youth can be employment opportunities in the restaurants as cook, waiter, security guards etc. One of the restaurants (Pentagon) has lack of manpower and they are willing to take manpower through a community organization.

The project would need some initial capital. Villagers were asked if they were interested to invest in the project. 80% of the respondents are willing to invest in the project. Maximum farmers (32%) of the village have household income from Tk. 6000-12000 per month, and among them, 87.5% are willing to invest in the project.

**3.4 Project Mechanism**

***3.4.1 Phase I (Motivational Phase)***

The community-based organization (CBO) will motivate the farmers of the selected village for selling their products to the organization and ensure them better marketing of their products by giving them a detail description about the project and their motives, which will start 3 to 4 months before starting the project. A season of cultivating rice or vegetables is lasting for 3 to 4 months. If farmers are aware of the project, they will cultivate according to the project and will be able to supply accordingly. So the initiators have to motivate them before starting a season of cultivation.

***3.4.2 Phase II (15 days)***

The CBO will have to collect the investment money from the farmers and the Krishi Bank as loan for making supply agreement and hiring the shop and storage. At the same time they recruit some unemployed youth for the organization from the village.

***3.4.3. Phase III (1 month)***

This phase will be demonstrated at October or April of the year, as farmers get their products in this time. The organization carefully occupies the first month supply basis as planned with the collected investment money. In the first month, it will supply rice for four times in a month for minimizing the initial cost of the business and other products will be supplied on daily basis. The CBO will first buy the products from farmers by paying them full amount and then supply it to the restaurants and collect the money. This money will be used to buy the products next day. So it will have to manage the money for only first day.

The loan taken from Krishi Bank will be repaid from the 1st month from the profit. The CBO will also give profit percentage to the investors and pay salary to the employees and the rents of storage and shop from the profit of the project. Farmers who are willing to increase their production (vegetables and dairy) according to the project will get loan from the CBO fund. The farmers will repay the loan after getting revenue from vegetables with a minimum interest rate.

***3.4.4 Phase IV (3 months)***

This phase will be continued after first month. The supply basis will be changed in this stage. The CBO will then supply rice two times in a month and other will be on daily basis. Simultaneously the organization will encourage the farmers for increasing production of vegetables and dairy (milk) to meet the demand of the restaurants.

***3.4.5 Phase V (8 months)***

After completing phase III, the farmers will be able to supply more vegetables with the increasing production because of loan in phase II. Then only one product dairy (milk) will be insufficient for supplying, which will recover within one year with the loan from CBO.

***3.4.6 Phase VI (1 year)***

In this phase, the organization can supply the whole products to the restaurants. Therefore, the organization will appoint more unemployed youths of the village and will collaborate with other farmers of the village. With further expansion, it will also collaborate with the farmers of other villages.

***3.4.7 Phase VII (Continue)***

By this time, the loan will be repaid by the organization and they have started getting extra profit from the project. Then the organization will try to expand the project in different villages and village products will be marketed in urban market under the supervision of the CBO. Continuous monitoring of the project will be ensured.

**3.5 Linkages of the Project**

***3.5.1 Backward Linkage***

Agro-based sector: Seeds and fertilizer industries may grow with the increasing production of rice and vegetables. Demand for tractors, motor pumps and other agricultural instruments will also increase.

Cottage sector: Handicraft materials are made using “Chon” material and plastic which is not locally available. So it has to be brought from nearby market. As a result demand of these products will grow with the increased demand of cottage products.

Fisheries Sector: In fisheries sector, fingerlings are not produced locally; they are brought from nearby production centre. For each 3 bighas of pond, there is an investment of Tk. 60,000 on fingerlings. This returns around Tk. 1 lakh of revenue. So the potential for fisheries sector is huge. As the demand grows, the demand for quality fingerling production will also increase.

***3.5.2 Forward Linkage***

Rice mills are needed to separate rice from rice husk. Locally available rice mills serve the need of local people and new rice mills will be needed with increase of production.

***3.5.3 Urban-Rural Linkage***

Distance between Bit Khoir village and Bogra town is 35.5 kilometers only. So there is always an opportunity to distribute and sell products through urban marketing. The handicraft products have also potentials in both urban markets like Dhaka City and international markets also. If proper linkage is created, there is always a chance of mass marketing of cottage products.

**3.6 Cost Benefit Analysis**

Table 5: Cost and revenue calculation

|  | Rice  | Vegetables  | Fish  | Dairy (Milk)  |
| --- | --- | --- | --- | --- |
| Amount of daily needed (in kg)  | 550  | 380  | 110  | 440  |
| Amount of product supplied (in kg)  | 550  | 190  | 110  | 90 (to one restaurant Pentagon)  |
| Present selling price of farmers (in Tk. per kg)  | 20  | 19  | 110  | 40  |
| Proposed selling price to farmers (in Tk. per kg)  | 25  | 22  | 120  | 45  |
| Restaurants‟ buying price (in Tk. per kg)  | 32  | 30  | 140  | 55  |
| Proposed price to restaurants (in Tk. per kg)  | 30  | 28  | 130  | 50  |
| Organization’s cost price (in Tk. per day)  | 13750  | 4180  | 13200  | 4050  |
| Organization’s selling price (in Tk.)  | 16500  | 5320  | 14300  | 4500  |
| Transport cost (per month)  | 10000  | 30000  | 6000  | 6000  |
| Revenue (in Tk. per month)  | (2750\*30)- 10000= 72500  | (1140\*30)- 30000= 4200  | (1100\*30)- 6000=27000  | (450\*30)- 6000=7500  |

Source: Field Survey, 2014

Initial cost/investment of the organization:

* Total Deposit money = Tk. 600000 (Tk. 300000 for Food Village, Tk. 200000 for Pentagon, Tk. 50000 for renting shop and Tk. 50000 for renting storage)
* First 7 days cost of rice: Tk. (96250+2000)= Tk. 98250
* Cost of vegetables: Tk. (4180+1000)= Tk. 5180
* Cost of fish: Tk. (13200+200)= Tk. 13400
* Cost of milk: Tk. (9900+200)= Tk. 1100
* Loan for increasing vegetable and dairy (milk) production= Tk. 200000

So the organization will have to collect around Tk. 1000000 for initializing the project. Willing respondents (80%) were asked to invest a fixed amount of their gross monthly household income. The dairy farmer and the fish cultivator were willing to invest Tk. 50000 each. Other will invest according their gross monthly household income. According to the questionnaire survey, total collected investment money will be Tk. 200000. The investors will get a percentage of the profit according to their investment money.

The organization will take loan Tk. 800000 from Krishi Bank at 8% interest rate (Chakraborty, 2012). So it will have to pay Tk. 928000 within 2 year.

The organization will give the worker of cottage industry some portion of the remaining money to start production in large scale. The organization will purchase those products and sell those in the shop at highway restaurant with some profit, which will also earn some money.

Monthly total revenue: Tk. 1, 11,200

Employees’ wage: Tk. 50000 (estimated)

Monthly instalment to repay loan: around Tk. (928000/24) = Tk. 39000

Remaining revenue: Tk. 22,200

Profit percentage for investors: Tk. (22200/1000000)\*100 = 2.22%

Investors will be paid: Tk. (2000000\*2.22%) = Tk. 4440

Monthly rent of shop and storage = Tk. (3000 + 2000) = Tk. 5000

So profit of CBO: Tk. (22000-4440-5000) = Tk. 12,760 per month

**3.7 Evaluation of the Project**

***3.7.1 Sustainability***

Initially the project will be started with the loan from Krishi Bank with a target to repay the loan within two year. After two year this project will be self-sustaining. The project will be more feasible after the increased production of vegetables and dairy product.

With the expansion of the project it will also serve the other branches of the selected highway restaurant (Food Village, Sirajganj branch). As the main stakeholder - villagers are willing to work with this project, this project is very well sustainable.

***3.7.2 Profitability***

All the stakeholders of the production-supply chain – farmers (producer), restaurants (consumers) and the community-based organization (CBO) of the project would be profited from it. This can be seen in the following table:

Table 6: Profit of all stakeholders

|  |  |  |
| --- | --- | --- |
|  | Type of product  | Profit increased from this project (Tk. /kg)  |
| Producer (farmers)    | Rice  | 5  |
| Vegetables  | 3  |
| Dairy  | 5  |
| Fish  | 10  |
| Consumer (restaurants)    | Rice  | 2  |
| Vegetables  | 2  |
| Dairy  | 5  |
| Fish  | 10  |
| Community Based Organization  |  | Tk. 12, 760 (in first month)  |

Source: Field Survey, 2014

Marketing of the village products would be ensured through this project. It would also increase the profit or income of farmers. Unemployed people would get more employment opportunities. Living standard of the villagers will be increased through this project.

***3.7.3 Replicability and Scalability***

The project is replicable in villages nearby Highway restaurants. It can be implemented in large scale if a group of villages is selected as study area. Then all of the products needed by the restaurants can be supplied.

**4. Conclusion**

Sustainable Rural Livelihood can be assured if a sustainable business model is created. That is why; a Social Business approach is followed to involve a business oriented development in the rural sector. From planning expertise, it is not always possible to develop a business model with all the market research that can be provided. However, this research is done from the planning point of view to show how a business model with a specific focus on rural development can benefit both rural people and the consumers.

There are certain recommendations to succeed in this kind of project. First of all, both consumer and producer’s consents are needed to become a part of the endeavour. With support from local community organization and rural people, there is a chance that it can thrive as a sustainable organization. Secondly, it is important to run a prototype of the project before going to the implementation phase. The prototype can help to overcome some of the difficulties that may be harmful in the implementation phase.

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