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Value Chain Analysis of Exportable Okra (*Abelmoschus esculentus* L.) from Bangladesh

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Abstract

A survey was conducted to assess the export supply and value chain analyses of okra (*Abelmoschus esculentus* L.) in Bangladesh. The survey was consisted of primary and secondary data from semi-structured interview of key persons involved in the supply chains of export market of okra and from the review of relevant reports and literature. Primary data were collected from 40 middlemen (from Ulokhola-10, Kawranbazar-7, Shambazar-8, Jatrabaribazar-5, Chandina-10), 5 service providers and 20 okra exporters of Dhaka city. It was found that the supply chain was fragmented and complex. The middlemen predominantly controlled the supply chains. Post-harvest management was poor, resulting low quality of the produce and low prices in the export market. The supply chain indicated that, the growers consumed 7.8% of their own product while 92.2% was sold out. About 28% farmers sold their okra at the field/farm-gates and 72% was sold in the local markets. The value chain analyses (VCA) revealed that, the net profit margin was 15.77 Tk/kg for both the UK and the Middle East markets whereas the net profit was 5.86 Tk/kg in local markets. The cost of airfreight was highest (63.97%) of all costs followed by the production cost of okra (16.85%) and the cost of packing (13.40%).

Keywords: Okra, export supply, value chain analyses, Bangladesh

1. Introduction

Agriculture is the prime source of economic activities of Bangladesh contributing 23.46% to the country's GDP and generating employment of over 3/4th of the national labour force. However, its share in export is not up to the mark (BBS, 2005). As many as 54 different kinds of vegetables were exported from Bangladesh (UNCTAD, 2008). It is an important sector in the total agricultural exports of Bangladesh (Karim, 2008). After independence, vegetables were started to export in a very limited scale. Though the export earnings from vegetables has grown over the years and emerged as the 10th largest export items of Bangladesh in 1997-98 with an export earning of more than US $30 million (Quasem, 2003; Hossain, 2004). Bangladesh earns Tk. 1456.33 million (US$ 24.70 million) in the year 2003-04 by exporting vegetables, which constitutes 60.08 percent of the earnings from agricultural products (Karim *et al.*, 2005). That was further boosted up and export of vegetables reached an all-time high record volume of 29,100 tons worthing US $ 46 million in 2004-05, thereby registering a growth rate of 84% over the previous year (Hossain, 2005).

Vegetables such as okra, yard long bean and green chilli are exported from Bangladesh to about 30 international market destinations. The major buyers are, in fact, located in two regions, the UK and the Middle East. In the Middle East, the major market outlets are Saudi Arabia, Kuwait, UAE, Qatar, Bahrain and Oman (EPB, 2005). In the export market channels, okra producers sold those to *faria* (15%), *paikers* (10%) and *beparies*/selected agents (75%) (Parish, 2001). The *beparies* working for exporters collected okra from production areas and the exporters were investing money through *beparies* for export quality okra.

Okra is an important export item of Bangladesh. It is exported by both traditional exporters and BRAC to the ethnic global markets. Okra market in abroad is very demand specific. Exporters, therefore, need to follow the marketing channels most appropriately to each importing country's specific demand in terms of varieties, size, timely delivery and required quality standard including packaging. Information on the constraints and potentials of exporting okra from Bangladesh is meager. No systematic attempt was taken yet to assess the problems and potentials of exporting okra. From the scenario discussed above, the present investigation was, therefore, undertaken to a) identify export supply chain and analyze value chain of exporting okra; and b) estimate the marketing costs and margins of its export from Bangladesh.

2. Materials and Methods

The study was based on the primary and secondary data. To collect information of the primary data, questionnaire and observational methods were followed. Some of the information on the structural and the organizational characteristics of the marketing systems were obtained by the observational method. Both the qualitative and quantitative investigations were made using the participatory techniques to identify the thrust areas for interventions. Information/data gathered through those methods were supplemented and verified using the secondary sources like various study reports, official documents, proceeding of meetings and related information available in the country.

2.1. Selection of study sites

Six locations from Dhaka, Comilla, and Gazipur districts were selected for the study (Table 1).

Table 1. Distribution of respondent in the study areas

Sampling units (Informers)	Dhaka City (as a whole)	Kawran -bazar, Dhaka	Shambazar, Dhaka	Jatrabari, Dhaka	Ullokhola, Gazipur	Chandina, Comilla	Total
Traders (Wholesalers/ Middlemen)	-	07	08	05	10	10	40
Retailers		05	05	05	05	-	20
Farmers	-	-	-	-	10	10	20
Exporters	20	-	-	-	-	-	10
Sub-total	20	12	13	10	25	20	90
Key Informers (Service providers)	05	-	-	-	-	-	05
Grand total	25	12	13	10	25	20	95

2.2. Sampling technique

The exporters, *beparies* and retailers were considered as the population for the study. The samples of the study included were okra exporting firms, *beparies* and retailers. A combination of both the non-probabilistic stratified random sampling and cluster-sampling techniques were followed. The samples were drawn using a systematic pattern (i.e. every fourth enterprise on the left hand side) from an arbitrarily designated point within each sample area (block, ward, road etc.).

2.3. Data collection method

For collecting relevant data from the respondents, specific questions were included in the interview schedules about the existing procurement systems, existing systems of okra export, transportation systems, domestic and export prices of okra, average transaction per shipment, spoilage of bought okra, marketing cost, margin of their exported okra, availability of cargo space, airfreight charges, information about foreign buyers, government export services, growth of export sales, export distributions, types of exportable vegetable, marketing problems as well as suggestion for improving the existing situations of exporting okra. The interview schedules was pre-tested and after necessary modifications, the schedules was finalized.

2.4. Collection of primary data

The primary data relating to export marketing were collected from the respondents (okra growers, exporters, middlemen and retailers) using the interview schedule. Interviewing respondents, observation method and informal discussion were held to obtain relevant data. Primary data were collected over two years.

2.5. Collection of secondary data

The secondary data were collected from various national and international organizations, viz. the published materials of Bangladesh Bureau of Statistics (BBS), Export Promotion Bureau of Bangladesh (EPB), Department of Agricultural Marketing (DAM), Food and Agricultural Organization (FAO) of the United Nations Reports, Ministry of Agriculture of Bangladesh, Bangladesh Planning Commission, consultancy reports of Bangladesh Agricultural Research Institute (BARI), Bangladesh Agricultural Development Corporation (BADC), Hortex Foundation and printing and electronic media.

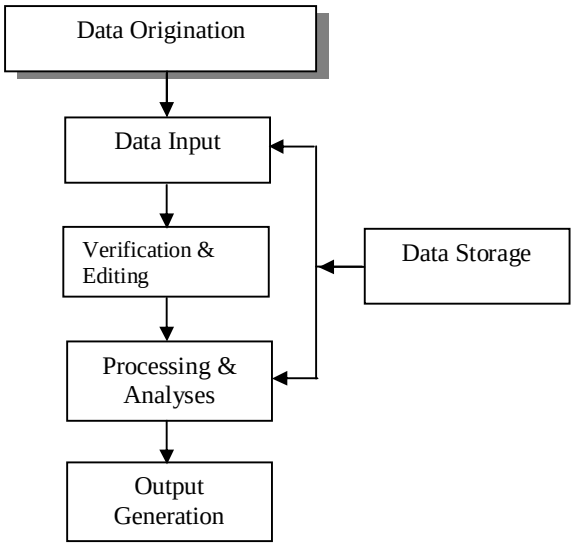


Figure 1. Data analysis flow

2.6. Data analysis

The processing of data was started with coding of questionnaires. The MS excel software packages were used for processing the collected information in the light of the scope of the study. Logical steps for processing of the data and analyses depicted in Figure 1.

3. Results and Discussion

The area and production of okra were 24,171 acres and 38,508 m tons, respectively during 2007-2008 and the average yield was 1593 kg/acre (BBS, 2010). In general, the supply chain comprised of three channels. Traditional exporters collected those from the local markets directly and also from Kawranbazar and Shambazar of Dhaka city. The produces were sorted, graded and packed in bamboo baskets and old paper carton, and sent to the airport for air-shipment to the destination markets. The markets were confined to the ethnic consumers and fetched low prices due to low quality and poor packaging.

The wholesale export prices were 85 and 130 Tk/kg in Saudi Arabia and UK, respectively whereas the prices of okra exported from Thailand to UK, Denmark; and from Kenya to UK and Holland was 233, 340, 197 and 248 Tk/kg, respectively (Hossain, 2005). The lower price of Bangladeshi okra may be due to poor quality of the produce and packaging too. Fresh okra for export was packed in carton (40×30×16cm) weighing about 500g and each carton contained net 5 kg of produce.

3.1. Export supply chain of okra

Several factors were involved in the production and marketing of okra, e.g. input suppliers, traders, processors and exporters. In general, the supply chains were comprised of any of the following three channels:

Channel-1: Direct marketing to consumers by the producers at the primary markets of village traders (retailers) to rural consumers;

Channel -2: Farm-gate selling to collectors, traders, commission agents and buyers; and

Channel -3: Selling to traders and wholesalers at assembly markets.

Greater quantities of produce were disposed of either by producers themselves, or village traders, taking the produce back to village hats or by commission agents and semi-wholesalers, who brought to other secondary markets or to terminal markets (urban wholesale, wholesale/retail and retail markets of large consumption areas) within and outside of the regions (Figure 2).

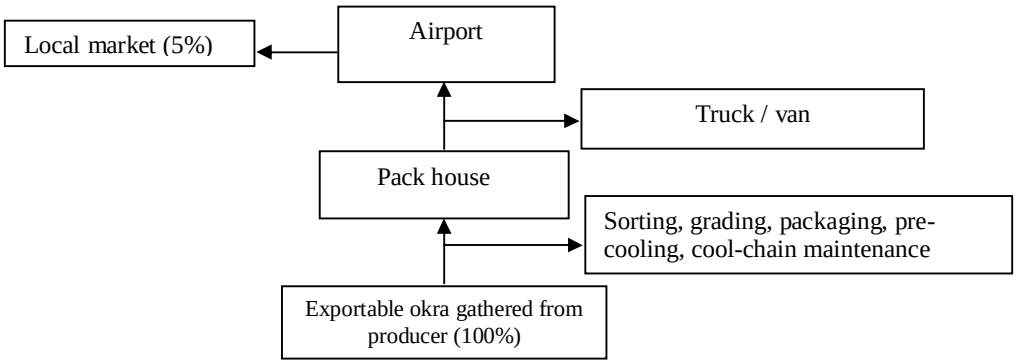


Figure 2. Export supply chain of okra (Field survey, 2005-06)

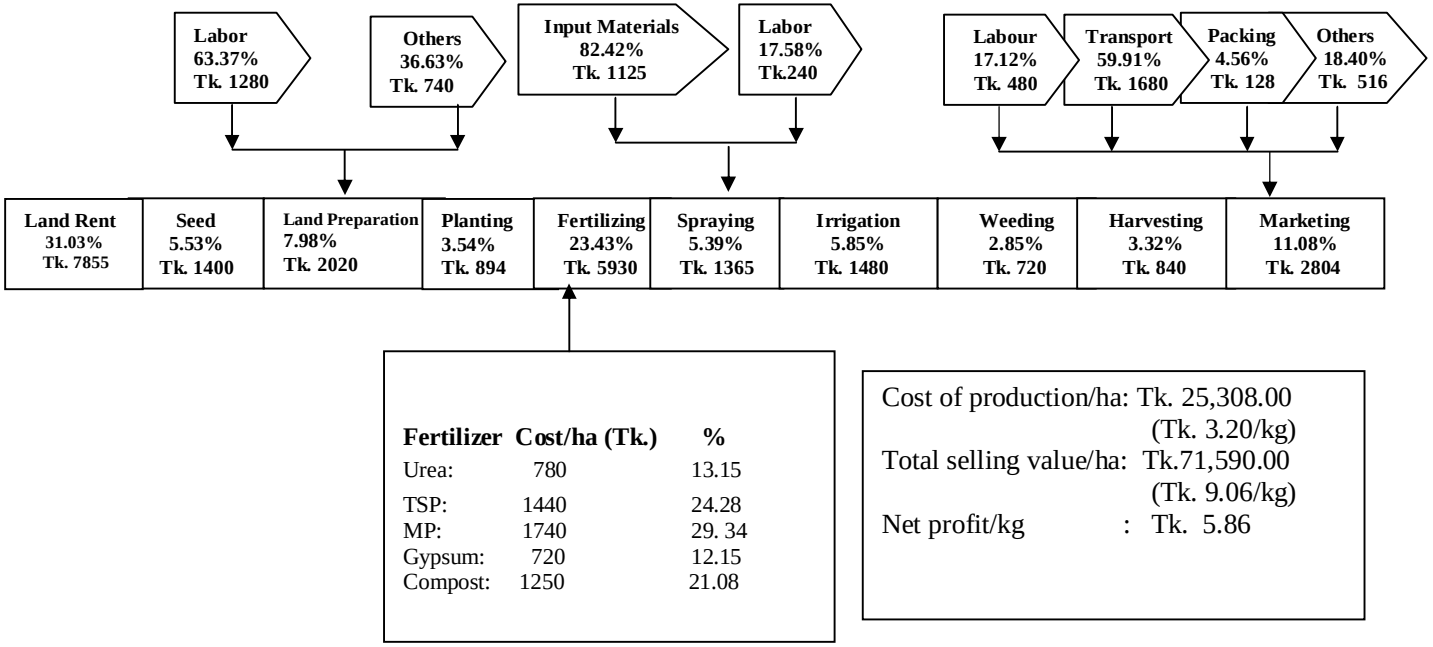
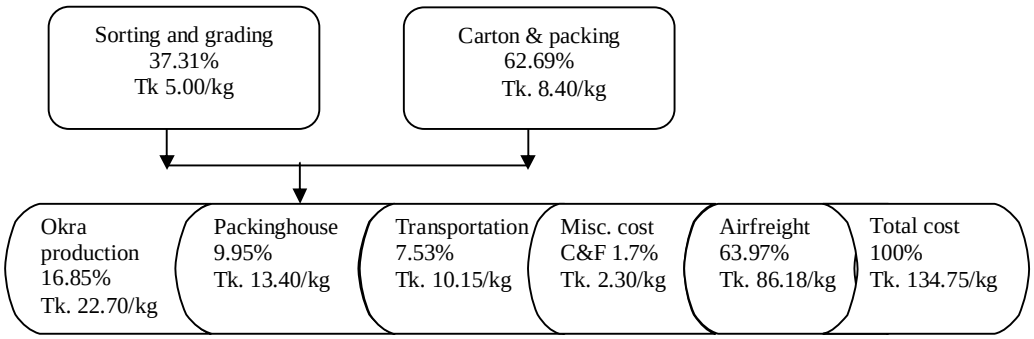


Figure 3. Value chain analyses of okra (1 US$=66 BDT in 2006) (Field survey, 2005-06)



Selling price/kg = Tk. 150.50; total cost/kg = Tk. 134.73; net profit/kg = Tk. 15.77

Figure 4. Export value chain of okra (Field Survey, 2005-06)

The supply chain represented the overall market place where the actors were present. The study clarified that the growers consumed 7.8 and the rest 92.2% were sold out. The producers sold the produces just immediately after harvest. It was found that 28% farmers sold okra at farm-gates and 72% at the local markets. At first, the collected okra were sent for sorting, grading, packaging, pre-cooling and cool chain management. Then that was sent to pack house. Around 95% packed okra was sent for export from airport and the rest 5% sent back to the local markets from airport due to quality deterioration and limited cargo space (Figure 2).

3.2. Value chain analyses of okra

The value chain analysis revealed that, the cost of land rent was 31.03% of the total cost of production followed by fertilizing (23.43%) and marketing (11.08%) cost of okra (Figure 3). The break-up of spraying cost indicated that 82.42% was incurred for pesticides. The break-up of marketing cost indicated that, 59.91, 17.12 and 4.56 % were for transport, labour and packing, respectively. The cost of inputs such as seeds, fertilizers and agro-chemicals were high and sometimes not available in due time which lead to adulteration and higher prices. Developing awareness on quality inputs and developing capacities to provide knowledge and information on quality inputs and their appropriate usage were urgently needed.

The cost of production of okra was 25,308 Tk/ha and the average yield was 7.9 mt/ha. So, the average net return was 5.86 Tk/kg. The average production cost was 3.20 Tk/kg. Thus, the margin selling price of farmers was 71,590 Tk/ha (9.06 Tk/kg) (Figure 3).

3.3. Export value chain of okra

The cost of airfreight is highest (63.97%) of all costs followed by raw material price (16.85%). The packing house cost comprises both sorting & grading and carton and packing cost. The export net profit was 15.77 Tk/kg (Figure 4). Offering lower price and constant supply of good quality produce is an easier strategy, which might help a longer vision to be the market leader and also to be the sustainable supplier in the foreign markets.

4. Conclusions

The findings indicate that okra export was highly remunerative for both farmers and exporters. The country as a whole was also benefited in terms of earning foreign exchange from exporting okra.

Quality improvement of produce and packaging may increase the export value, which needs urgent intervention to exporting by organizing quality production through the contract farmers. The success of okra export may act as an eye-opener to producers, exporters and built confidence among all agencies that Bangladesh can also successfully export a variety of other high valued horticultural produces. The growth potential okra was higher than any other horticultural crops at that time. However, the development was still very slow and exporters were operating at the low efficiency levels due to the diversified nature of problems associated with okra export markets. The findings of the present study will provide basic information for the supply chain along with costs and margins of okra exports from Bangladesh and it would be helpful for vegetable growers, traders, exporters, policy makers, researchers; and to build a foundation for further research and development of this aspect.

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