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Neha Lakra
Department of Agricultural
Economics, IGKV, Raipur,
Chhattisgarh, India

AK Gauraha
Department of Agricultural
Economics, IGKV, Raipur,
Chhattisgarh, India

Prishila Kujur
Department of Agricultural
Economics, IGKV, Raipur,
Chhattisgarh, India

Economics of sweet potato production and marketing pattern in bastar plateau of Chhattisgarh state

Neha Lakra, AK Gauraha and Prishila Kujur

Abstract

The study aims to examine the economics of Sweet potato Production and Marketing pattern which include Economics of Production, Marketing Surplus and Price Spread at different size of farms in Bastar and kanker district of bastar plateau of Chhattisgarh state. The survey for this purpose was conducted in three blocks of each Bastar and kanker district of Chhattisgarh. Primary data were collected from 300 farmers, five villages from each block was selected through personal interview method with the help of pre-structured schedule for the year 2016-17. Study revealed that the yield value of output per hectare and cost of production per quintal of Sweet potato is to be estimated as average cost Rs. 52709.49 per hectare. Overall on an average yield was observed 88.83 quintals per hectare. The gross return was varied from Rs. 130972.96 per hectare at marginal farms to Rs. 146957.02 per hectare at large farms. On an average the Net income was Rs. 86724.30 per hectare. An average Marketed surplus of Sweet potato was 26.55 qtls/farm. The average yield was observed to be 88.83 quintals per hectare. Highest yield was found at large farms i.e. 92.47 quintals per hectare across the different farms. The marketable surplus was highest in case of large farms (66.88 Q) followed by Medium farm (21.29 Q), Small farm (14.52 Q), Marginal farm (3.50 Q) and Overall (26.55 Q). Therefore the marketable surplus shows rising trend as farm size increases. The producer's share in consumer rupee was higher in case of channel-II than in channel-I for Sweet potato. There was large number of intermediaries in the channel-I followed by channel-II. Because of it, producer's share in consumer rupee was comparatively lower in channel-I and higher in channel-II i.e. large marketing channel reduced producer's shares in consumer rupee is accepted.

Keywords: Production, yield value, marketed and marketable surplus, marketing channel, producer's shares

Introduction

Sweet potato (*Ipomoea batatas*) occupies 0.14 million hectares with an annual production of 1.7 million tonnes. Sweet potato is largely grown in Orissa, West Bengal, Bihar and Eastern Uttar Pradesh (S. Edison, 2005). The productivity of sweet potato in India is 8 tonnes per hectare as compared to at 15-18 tonnes per hectare in China and Japan which account for 85 per cent of the world production. The worldwide demand for cassava and other minor roots and tubers is projected to increased by 49 per cent and for sweet potatoes and yams by 30 per cent. The cultivated sweet potato (*Ipomoea batatas* L.) and the wild species closely related to it belong to the family Convolvulaceae, genus *Ipomoea*, subgenus *Eriospermum*, section *Eriospermum* (formerly *Batatas*) and series *Batatas* (Austin and Huaman, 1996). Tuber crops find an important place in the dietary habits of small and marginal farmers especially in the food security of tribal population. Tuber crops not only enrich the diet of the people but also possess medicinal properties to cure many ailments or check their incidence. Many tropical tuber crops are used in the preparation of stimulants, tonics, carminatives and expectorants. The tuber crops are rich in dietary fibre and carotenoids. The Indo-Burma region is the centre of origin of taro and Asiatic edible yams. The two hot spots of global biodiversity viz., North Eastern Himalayas and Western Ghats are particularly rich in wild relatives of tropical root and tuber crops. Safe conservation and sustainable use of plant biodiversity is essential for meeting the present and future needs of tuber crop improvement in India. Despite the economic importance of edible aroids and yams as a food material in these regions, there is limited scientific information on their postharvest technologies to maintain quality and improve marketing potential. Non-availability of statistics on area, production, productivity and prices for these underutilized and underexplored crops is another major limitation for undertaking policy studies and recommendations.

Corresponding Author:
Neha Lakra
Department of Agricultural
Economics, IGKV, Raipur,
Chhattisgarh, India

Data on world production and trade of edible aroids is difficult to estimate because of their very limited significance in terms of total production of root and tuber crops. These crops like cereals and commercial crops, are also affected by the demand and supply pressures though in a limited way leading to fluctuations in their market prices. Further these crops are cultivated mostly by marginal and small farmers as their livelihood in the country. Marginal and small holder farmers face numerous challenges in all fronts from production to marketing. Added to these problems, unorganized marketing system results in instability in the prices, lower share of the producer in the consumer's rupee and increases inefficiency in the marketing system. Therefore the need of the hour is to have a clear policy on marketing of and the pricing of these under explored tubers for the benefit of the farmers to sustain interest on the crop in the long run. It requires information on how the markets for these crops are structured, different functionaries involved in channelling the tubers from producer to consumer. An attempt was made to understand the market structure, market channels, price spread and marketing efficiency in different channels involving edible aroids and yams by surveying production, marketing and consumption.

Materials and Method

Chhattisgarh state consists of three well known Agro-climatic zones *i.e* Northern hills, Chhattisgarh Plains and Bastar Plateau. The study was conducted in Bastar Plateau of Chhattisgarh, out of seven districts in Bastar Plateau, Bastar and Kanker districts was selected on the basis of larger area

under tuber crops. Three blocks from each district was considered randomly on the basis of highest area under tuber crop cultivation. Out of selected 6 blocks from each Bastar and Kanker districts, 50 respondents from each of the blocks was taken for the present study. In all a sample of 300 tuber growers was considered for the present study.

Analytical Tools

Suitable analytical tools were adopted for analyzing Cost of cultivation, Gross return, Net income, Cost of Production, Input-Output ratio, Family Labor Income, Farm Business Income, Marketable surplus, Marketing margins, Marketing cost, Producer price, Gross margin, Net margin, Price Spread.

Results and Discussion

Economics of Tuber Production

The yield value of output per hectare and cost of production per quintal of Sweet potato is to be estimated as average cost Rs. 52709.49 per hectare which varied from Rs. 50822.83 per hectare at marginal farms to Rs. 52888.75 per hectare at large farms. Overall on an average yield was observed 88.83 quintals per hectare. The gross return was varied from Rs. 130972.96 per hectare at marginal farms to Rs. 146957.02 per hectare at large farms. On an average the Net income was Rs. 86724.30 per hectare. On an average Family labour income was Rs. 104704.08 and Farm business income was Rs. 9399.46. The average per quintal cost of production was estimated as Rs. 593.37. On an average Input-Output Ratio was 1: 2.64 which varies from 1: 2.58 at marginal farms to 1: 2.77 at large farms.

Table 1: Economics of Sweet Potato at sample farms

| S. No. | Particulars | Marginal | Small | Medium | Large | Overall |
|--------|-----------------------------|-----------|-----------|-----------|-----------|-----------|
| 1. | Cost of Cultivation (Rs/ha) | 50822.83 | 53076.48 | 53005.37 | 52888.75 | 52709.49 |
| 2. | Yield (qt/ha) | 85.84 | 86.30 | 88.25 | 92.47 | 88.83 |
| 3. | Gross returns (Rs/ha) | 130972.96 | 134465.76 | 139128.77 | 146957.02 | 139433.79 |
| 4. | Net income (Rs/ha) | 80150.13 | 81389.28 | 86123.40 | 94068.27 | 86724.30 |
| 5. | Family labour income | 91695.29 | 92088.54 | 104238.05 | 111858.97 | 104704.08 |
| 6. | Farm Business income | 12123.82 | 11309.20 | 8800.86 | 7428.21 | 9399.46 |
| 7. | Cost of Production (Rs/qt) | 592.06 | 615.02 | 600.63 | 571.96 | 593.37 |
| 8. | Input-Output ratio | 1: 2.58 | 1: 2.53 | 1: 2.62 | 1: 2.77 | 1: 2.64 |

Marketing Pattern

Marketable Surplus

Table 02 shows that on an average total quantity produced is 49.71 qtls per farm. The highest marketable surplus was observed in case of large farms (66.88 Q) followed by Medium farm (21.29 Q), Small farm (14.52 Q), Marginal

farm (3.50 Q) and Overall (26.55 Q). It can also be observed from the table that the marketable surplus shows rising trend as farm size increases. It clearly indicates that marginal and small farms have smaller marketable surplus as compared to medium and large farms.

Table 2: Marketable surplus of Sweet Potato of sample farms (in qtl/farm)

| S. No. | Particulars | Marginal | Small | Medium | Large | Overall |
|-----------|----------------------------|---------------|----------------|----------------|-----------------|----------------|
| A. | Sweet Potato | | | | | |
| 1. | Total quantity produced | 9.44 (100.00) | 34.52 (100.00) | 48.54 (100.00) | 106.34 (100.00) | 49.71 (100.00) |
| 2. | Quantity retained for seed | 1.47 (15.57) | 11.04 (31.98) | 14.72 (30.33) | 23.97 (22.54) | 12.80 (25.75) |
| 3. | Consumption | 4.47 (47.35) | 8.96 (25.96) | 12.53 (25.81) | 15.40 (14.48) | 10.34 (20.80) |
| 4. | Total quantity utilized | 5.94 (62.92) | 20.00 (57.21) | 27.25 (56.14) | 39.46 (37.11) | 23.16 (46.59) |
| 5. | Marketed surplus | 3.50 (37.08) | 14.52 (42.06) | 21.29 (43.86) | 66.88 (62.89) | 26.55 (53.41) |

Marketing cost of Sweet Potato crops

It was observed from table 03 that the producer's share in consumer rupee was higher in case of channel-II (100 per cent) due to no intermediater found between producer and consumer than in channel-I (49.29 per cent) due to larger number of intermediaters *i.e.* village trader – wholeseller - retailer found between producer and consumer for sweet

potato. It was also observed that the margins of retailers was high as compared to wholesaler and village merchant *i.e.* 5.49 per cent in channel-I respectively. The marketing cost paid by the different intermediateries was observed higher for wholesaler as compared to village merchant. It is evident from table that there is large number of intermediateries in the channel-I followed by channel-II. Because of it, producer's

share in consumer rupee is comparatively lower in channel-I and higher in channel-II. On the basis of above results our hypothesis number I i.e. large marketing channel reduced producer's shares in consumer rupee is accepted.

Table 3: Price spread in marketing of *Sweet Potato* under different channels

| S. NO. | Particular | I | II |
|--------------------------|---------------------------------------|------------------|------------------|
| A. Producer | | | |
| 1. | Price received by producer | 1600.00 | 1569.67 |
| 2. | Transporting charges | 130.00 | 160.00 |
| 3. | Net price received by producer | 1470.00 | 1409.67 |
| B. Village Trader | | | |
| 1. | Expenditure incurred VT | | |
| a. | Transporting charges | 118.25 | - |
| b. | Loading un-loading | 124.98 | - |
| c. | Miscellaneous | 115.45 | - |
| d. | Sub-total | 358.68 | - |
| e. | Price paid | 1600.00 | - |
| f. | Marketing Cost | 358.68 | - |
| 2. | Total cost incurred by village Trader | 1958.68 | - |
| 3. | Price received by VT | 2089.32 | - |
| 4. | Net margin of VT | 130.64 (4.21) | - |
| C. Wholesaler | | | |
| 1. | Expenditure incurred | | |
| a. | Transporting charges | 122.30 | - |
| b. | Mandi commission | 50.00 | - |
| c. | Loading un-loading | 125.45 | - |
| d. | Weighing and packing | 20.00 | - |
| e. | Miscellaneous | 110.25 | - |
| f. | Sub-total | 428.00 | - |
| g. | Price paid by WS | 2089.32 | - |
| e. | Marketing Cost | 428.00 | - |
| 2. | TC incurred by WS | 2517.32 | - |
| 3. | Price received by WS | 2667.32 | - |
| 4. | Net margin of WS | 150.00 (4.50) | - |
| D. Retailers | | | |
| 1. | Expenditure incurred | | |
| a. | Transporting charges | 140.25 | - |
| b. | Loading un-loading | 125.75 | - |
| c. | Packing | 25.25 | - |
| d. | Other charges | 117.00 | - |
| e. | Sub-total | 408.25 | - |
| f. | Price paid by retailer | 2667.32 | - |
| e. | Marketing Cost | 408.25 | - |
| 2. | Total cost incurred | 3075.57 | - |
| 3. | Price received | 3246.17 | - |
| 4. | Net margin of retailer | 170.60 (5.49) | - |
| E. | Consumer price | 3246.17 (100.00) | 1569.67 (100.00) |
| | Producer's share in consumer rupees | 49.29% | 100% |

Conclusion and Suggestions

The study concludes that the average yield of Sweet Potato was estimated 88.83 quintal per hectare. The average marketed surplus is estimated as 26.55 quintal per farm (53.41 per cent) of Sweet Potato respectively at different farms. It was observed that yield variation for marketable surplus shows rising trend as farm size increases. It clearly indicates that marginal and small farms have smaller marketable surplus as compared to medium and large farms. The producer's share in consumer rupee was higher in case of channel-II than in channel-I for Sweet Potato. It is evident that there is large number of intermediaries in the channel-I followed by channel-II. Because of it, producer's share in consumer rupee is comparatively lower in channel-I and higher in channel-II. It was suggested from this study that

yield potential can be increased by providing technical knowledge, facilitating quality seed and fertilizer inputs timely to increase the production of Sweet Potato. Well organized form of market for tuber crops and proper storage facilities must be provided to the farmers in order to get higher return of the produce. Value added products might also be prepared from tubers in the state through small scale industries which will encourage farmers to cultivate tuber crops in large areas. Lack of organized market for tuber crops forces farmers as well as other inter mediatory to sale it off immediately at lower prices. Marketing of tuber crops in the study area is not properly organized and that the farmers share's in the price paid by the ultimate consumer is very small. Arrangements should be made for the marketing of this crop at least at block levels so that farmers can easily sell their produce at remunerative prices. This will encourage the farmers to grow it at large scale in the area which will help the farmers to receive better prices of the crops.

References

- Ahmad IM, Makama SA, Babagana GA. Sweet Potato in Nigeria: Trends and Socio-Economic Characteristics of Farmers in Selected Local Government Area of Kano State. *Indian Journal of Economics and Development*. 2016; 12(2):223-228.
- Chavda H, Marviya PB, Tarpara VD, Savalia VA. Marketing and Estimation of Post Harvest Losses of Potato in Banaskantha District of Gujarat. *International Journal of Agriculture Sciences*. 2016; 8(52):2420-2422.
- Kassali R. Economics of Sweet Potato Production. *International Journal of Vegetable Science*. 2011; 17:313-321.
- Mutai BK, Agunda EN, Muluvi AS, Kibet LK, Maina MC. Determinants of smallholder sweet potato farmers' participation in different market options: The case of Vihiga County, Kenya. *Journal of development and agricultural economics*. 2013; 5(8):314-320.
- Okoye BC, Abass A, Bachwenkizi B, Asumughal G, Alenkhe B, Ranaivoson R *et al.* Effect of transaction costs on market participation among smallholder cassava farmers in Central Madagascar. *Okoye et al., Cogent Economics & Finance*. 2016; 4:1143597.
- Onubuogu GC, Onyeneke RU. Market Orientation of Root and Tuber Crops Production in Imo State. *Agricultural Science Research Journals*. 2012; 2(5):206-216.
- Regina HYFU, Kikuno H, Maruyama M. Research on yam production, marketing and consumption of Nupe farmers of Niger State. *African Journal of Agricultural Research*. 2011; 6(23):5301-5313,
- Sahu PK, Kosta AK. An Economic analysis of production and marketing of colocasia crop in kabirdham district of Chhattisgarh. M.Sc. (Ag.) Thesis, Indira Gandhi Agricultural University, Raipur (C.G.), 2013, 75.
- Salam SR, Banafar KNS. Production and marketing of tuber crops in Baster districts of Chhattisgarh. M.Sc. (Ag.) Thesis, Indira Gandhi Agricultural University, Raipur (C.G.), 2005, 115-116.
- Tadesse T, Degu G, Shonga E, Mekonen M, Addis T, Yakob B. Current status, Potentials and challenges of Cassava production, processing, marketing and utilization: Evidence from Southern Ethiopia. *Greener Journal of Agricultural Science*. 2013; 3(4):262-270.