CHAPTER-7
SUMMARY
AND
CONCLUSIONS
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Agriculture is a cornerstone of development for a developing economy like India. Being most important sector of Indian economy, its accounting for between one fourth to one third of gross domestic product. Over 75 per cent of the population lives in villages and depends on agriculture for its employment and livelihood. Over 200 million farmers have been the backbone of India's agriculture. It is a known fact that more than 80 per cent of our farmers are small and marginal with fragmented holdings. These farmers are particularly with low land-base have been trapped in the vicious circle of poverty characterized by 'low income low saving-low investment-low productivity'. To get the farmers out of this vicious circle, planners and policy makers are consistently trying to encourage them with all sorts of provisions to extend possible assistance to adopt the cultivation of high value cash crops suitting to the specific localities.

Vegetables a very important sub-group of horticultural products, play an important role in human nutrition and socio-economic development of the country. These are the suitable high value cash crops for Azamgarh district of Uttar Pradesh—the area under study.

Cultivation of vegetables associated by good storage, processing, packaging and marketing facilities would help farmers to increase their income and employment. But poverty, technological ignorance, small size of holding and
multiplicity of the woes of farmers are such factors which compel them to raise multiple vegetable crops even in small quantities with heavy wastage. Further, farmers organizations are either non-existent or disorganized as against the unionized traders and there is exploitation by commission agents/traders. The present study is an effort to put forth the real speech of vegetables economy of the plan region of the state of Uttar Pradesh in general and district of Azamgarh in particular. Specific objectives of the study are:

(I) to examine the proportion and place of vegetable in existing cropping pattern on the sample farms.

(II) to estimates the cost and returns in cultivation of selected vegetables;

(III) to work out the marketing cost and producers share in consumers rupees and analyses the price spread of selected vegetables for different marketing channels to measure the efficiency of vegetable marketing;

(IV) to study the effect of variation in consumers prices on the share of producer sellers; and

(V) to suggest the policy measure emerging from the observation and findings of the study, for increasing the income and employment through vegetable cultivation in the area under study.

Methodology:

The study has been carried out in district Azamgarh of Uttar Pradesh. It took into account both the primary and the secondary data pertaining to the Agricultural year 2000-2001. Keeping the time and resources constraints in view, the sample survey method covering 100 vegetable farmers, 25 markets
functionaries and five major vegetable crops was applied for the primary data. Crops selected for study are potatoes, onions, cauliflower, brinjal and chillies. Every operation related to production and marketing of these crops was examined thoroughly and recorded through personal interview. Secondary data were collected from different published and unpublished documents available different official records and libraries.

Multistage random sampling technique has been used with stratification at its ultimate stage. At first stage of selection Purani Subjee Mandi came in the sample. Out of 22 blocks of the district only three comes under the main feeding zones of this market. Of these Palani block has been selected at the second stage. On the basis of distance form the selected Subjee Mandi, villages of this block were grouped into two zones and 5 of them in each zone have been selected at the third stage. At the last, 100 vegetable farmers (10 each from sample villages) comprising of a total of 52 marginal farmers (below 1.00 hect.), 26 small farmers (1.00 to 2.00 hect.) and 22 large farmers (2.00 hect. and above) and 25 market functionaries (5 each from whole sellers, commission agents, palledars, retailers and consumers) were selected.

Tabular analysis for its inherent nature was used for the most of the part of study. Commonly used statistical method viz, averages, percentages, Coefficient of Variation etc. Have been applied to examine the relative magnitudes and degrees of variabilities. Further, marketing Efficiency of channels for each
vegetable, price spread and producers share in consumers rupee were calculated. Cobb-Douglas production function has been used to assess the effect of variation in producers shares due to variation in consumer's prices.

**Size of holdings and cropping pattern:**

The average size of operational holding on a sample vegetable growing farms is 1.13 hectares. The size-group-wise distribution reveals that a marginal farmer operates on 0.43 hectares, small farmer on 1.31 hectares and large farmer on 2.55 hectares of land. The average cropping intensity for all farm situations was 147.79. It was maximum on marginal farms with 153.49 and minimum on small farms with 146.56. The cropping pattern reveals that irrespective of their seasons wheat and paddy are major area occupying crops on all size-group of sample farms. They enjoy 48.67 and 37.17 per cent of the operational (net sown) area respectively. Aggregate of area under all the vegetable crops grown in all the seasons (Kharif, rabi and zaid) is kept under the head 'vegetables'. 33.63 per cent of the area on all farms is allocated to these crops.

The proportion of available area allocated to vegetables depicts an inverse relationship with the size of holdings. It varies between 29.80 and 51.16 per cent however; the absolute area shows a positive relationship with holding sizes. Further, it was observed that the sample farmers either grow single vegetable or a combination of two or more. The all farm average situation exhibits
that majority of the farmers i.e. 80.00 per cent grow potato either as a single crop or as a combination of two or more. 34.62 per cent of the marginal farmers grow potato only while 13.46 grow potato and onion and 7.69 per cent grow all the five crops. Potato, onion and brinjal is the next favoured crop combination on marginal farms. On small farms potato and onion; potato onion and cauliflower; potato, brinjal and chillies; potato and cauliflower; and potato, onion, cauliflower, brinjal and chillies are the most favoured crop combinations. Most of the large farmers (i.e. 31.82 per cent) preferred to grow potato and onion combination followed by the combination of all the five crops under study.

80.00 per cent of the sample farmers who have grown potato either a single vegetable crop or in combination with others allocated 11.58 per cent of their operation area to potato. Size-group wise picture is entirely different depicting that 90.90 per cent of the large farmers are potato growers who allocate 10.49 per cent of the area to it while 92.30 per cent of the small farmers grow it on 8.62 per cent of the area and 69.23 per cent of marginal farmers grow it are 20.81 per cent of their area. On the other hand onion is the crop which is grown by 52.00 per cent of all the farmers but only on 6.84 per cent of the area. Conversely cauliflower is grown by also 41.00 per cent of the farmers but enjoys more area (i.e. 11.13 per cent) than onion. Brinjal is grown by 42.00 per cent of the farmers on 5.86 per cent area and chillies by 39.00 per cent on 4.29 per cent of the cultivated area. Thus potato is most popular semi-perishable vegetable crop and
cauliflower is the most popular among other vegetable crops followed by brinjal. Both the proportions of grower and the area of chillies crop is least among all the crops.

Production, Productivity and Returns from Vegetables Cultivation:

Like average area under these crops on sample vegetable growing farms under different size groups, total production and yield per unit of area also depict a variable trend. Average yield of potato was observed to be 224.84 quintals per hectare which varied between 222.44 and 227.40 quintals per hectare depicting an inverse relationship with size of farm. But, onion yield does not give any fixity in relationship with size of farms. Its average yield was 227.45 quintals per hectare with maximum of 231.99 quintals per hectare on small farms and minimum of 224.58 quintals per hectare on large farms. Yield of cauliflower varied between 200.71 and 210.34 quintals per hectare depicting a positive relationship with size of farms. Yield of brinjal and chillies also depict the similar trend as onion but their average yield stood at 157.32 and 157.38 quintals per hectare respectively.

There exists an inter-farm variation in the average prices fetched by the producers against the sale of their produce. Variation in both the yield and the prices contribute in the variation in the total receipt. This is why there exists an inter-farm variation in the total receipt depicting almost similar trend as in case of
yield of the crops. On the basis of total return per unit of area it can be concluded that chillies are the most remunerative crop followed by cauliflower.

**Cost of Vegetable Cultivation:**

Cost of cultivation in its various forms viz., Cost $A_1/A_2$, Cost B and Cost C for all the crops have been calculated for different size groups of farms. Cost C for when averaged for all forms situated stood almost equal for both the semi-perishable crops while for perishables it depicts a variable tendency. Cultivation of Brinjal is a little bit higher cost involving than the rest of the perishable crops. Further, cost of production in (Rs/qt) for all the crops were calculated and compared with the prices received by the farmers. It was found that prices are well for off from the cost of production, which in turn leave a considerable amount of net return for the cultivators. Returns over Cost $A_1/A_2$, Cost B and Cost C were also worked out which are quite satisfactory. Ultimately to judge the profitability of vegetable cultivation cost-benefit ratios were calculated. The cost–benefit ratio of cauliflower and chillies are very high on all the size group of forms depicting that these two are most beneficial crops but there cultivation in the area is not as popular as that of potato, onion and brinjal. This is because of the greater risks and uncertainty on his part of technology, climates and prices.
Vegetable Marketing:

Vegetable production is a profitable venture only if the markets associated with good storage facility and transportation are readily available in the area. Though the type of vegetables, its area etc. are determined by the demand in the local markets, the place and the time of sale is determine by the quantity of marketable surplus, waiting capacity of the farmers and the conditions of transportation facilities. The study discloses the fact that most of the farmers remain indifferent between the places of sale. They prefer to sell their produce either in farm gate or in mandies depending on the prices and the quantity of marketable surplus. If quantity is very small it is sold in the villages itself but if the bulk is considerable and mandi prices is remunerative, it is transported to the market yard. There are 9 different marking channels through which product passes from producers to the ultimate consumers. But, its number varies from product to product. Channel-I (producer-consumers) is the shortest channel as it involves no middleman and is common for all vegetables. Similarly Channel-II (Producer-Retailer-Consumer) is also common for all the vegetables but the movement of vegetables through these two channels is meager. Including these two potato, onion and brinjal have 5 but different channels, cauliflowers has 6 and chillies 4 channels. Channel wise decomposition of marketed surplus of these vegetables (delivering from producers) for different farm groups has also been studied.
Summary and Conclusion

Marketing Cost, Price Spread and Producers Share:

Average marketing cost (item wise) born by producers of each class for each channel during different stage of sales have been computed. It was found that transportation cost forms a major portion of the cost which varies between size-group of farms and the channel in every stage. This variation is because of the distance from mandi and the quantity of produce transported as well as the means of transport. In case of the sale of stored potato, maximum of the marketing cost is accounted by cold storage charge. Also, the sum of marketing cost born by all the agencies involved and some of their margins increase with the length of the channel, which altogether forms the price spread. Higher the price spread, lower is the producers share. In case of Channel-I, producers share is highest as there is very little or almost no marketing cost exists in the movement of producer to its ultimate consumer. Length of the channel also determines the consumer price, in some of the cases specially in later stages. Consumer prices in the first and least stages when supply is very small trend to be high. Producers share in consumer rupee determines the marketing efficiency of producers which is highest in Channel-I but then absolute gain is very less for all the crops. In rest of the channels it, in some of the cases, was observed below 50 per cent and in few cases above 70 per cent but in most of the cases it varies between 50 and 70 per cent. Brinjal in first stage fetches higher producers share than other stages and the crops. Marketing efficiency of channels reveal that Channel-I and Channel-II are highly
efficient channels but, unfortunately supply through these are very little as compared to other channels.

**Seasonality in Supply and Fluctuating Prices:**

Month wise arrival and wholesale prices of vegetable depicts the seasonality of supply and fluctuation in prices. Variation in arrival as presented by the magnitude of C.V. depicts that supply of onion is most consistent which that of cauliflower is most varying. Data related to wholesale prices were not available for all the months even then it can be concluded that they are quite fluctuating. Same was proved by the retail prices by giving their range of variation as well as by C.V.

**Effect of Price Fluctuation on Producer Share:**

Effect of variation in consumers price on producers share was computed using cobb-douglas from of the function. It was found that for all the crops there is a high degree of positive correlation between these two variables and over 90 per cent of the variation in producers share is explained by variation in consumers price for all the crops except onion. This function finds best fit if the prices vary within the actual range of variation.

**Management of Vegetable Marketing System:**

Organisation and functioning of farm markets in Uttar Pradesh in general and in district Azamgarh in particular has gone structural change after the
enactment of the Agricultural Produce Market Regulation Act (1964). The entire state has already come under the purview of the Act. However, the various provisions of the Act are yet to be effectively implemented in the district. An open violation of the Act is found. Major among them are charging commission from vegetable producers, trade through personnel negotiation, sale of vegetables without proper weighment and seldom supervision of trade by auction supervisor(s) appointed for the very purpose. Besides, non-availability of some of the crucial infrastructural facilities like cold storage and automated weighing machines and poor rate of their utilization, poor rate of utilization of facilities like Grading Laboratory, auction platform etc. are the matter of concern for efficient trade of vegetables in the area.

Policy Implications:

In the emerging scenario of diversification, commercialization and globalization of farm sector, the importance of vegetables has increased manifold. Present study reveals a number of issues for policy markers which will improve the efficiency of production and marketing system of vegetables. Some of these are:

- Continuous division of land, generation after generation, be checked by effective legislation and controlled growth of population, so as to maintain the economic size of holdings.
- Adoption of modern cultivation technology is encouraged through better extension support, ensuring inputs availability as per demand and its
timeliness if possible at doorstep or at approachable places, provisions of financial assistance etc.

♦ Establishment of agricultural clinic in the villages or at the mandi site.

♦ Making provisions of price support to the farmers and insurance against risks and uncertainties.

♦ Direct involvement of processing industries at the grower’s level will reduce the extent of post harvest losses of vegetables and thereby increase the supply of vegetables.

♦ Sub-market yards should be developed and made functional in district which will contribute to efficient trade of vegetables in the area.

♦ Not only new market reforms are needed for improving the efficiency of vegetable marketing system in district in particular and in the state in general, but already introduced reforms are to be effectively implemented.

♦ If the various provisions of the agricultural Producer Market Act are faithfully and effectively implemented, it will ensure a considerable cut in marketing cost. On the other hand sale through open auction, proper weighment of the producer, prompt payment to farmer seller and governance of the market by elected committees having fair representation of farmers would encourage the production of vegetables and increase the farm income and employment.

♦ Cooperative are to be encouraged to enter into the activities of assembling, storage, transportation and processing of vegetables in the study area. Further, improvement in transport and communication facilities are to be on the priority for the Government for the region.

♦ The basic infrastructure facilities are to be provide in the area like cold storages, marketing communication network etc.

♦ Marketing intelligence and grading standards are another two areas which are also high on the agenda for further market reforms for vegetable.
Agricultural extension services need remodeling in technology and mindset, to give due to place marketing extension in overall agricultural extension packages for vegetables.

If above policies are implemented properly, this will create a favourable environment for vegetable trade benefitting both the producers and the consumers. But this needs a coordinated effort of on government, mandi officials, traders and farmers level.