Chapter 3

Methodology
3.1 Need for Study

Vegetables are the perishable consumable good. It requires immediate consumption and market to sell. Supply Chain Management (SCM) plays very important role for its management in term of reduction of product losses in transportation and storage. It also increases sales and dissemination of technology. SCM can be beneficial for capital and knowledge among chain partners. It provides information about the flow of products, markets and technologies, tracing and chasing to the source. Better control of product safety and quality large investments and risks are shared among farmers, retailers and customers. Thus this study would support to increase efficiency of SCM system alongwith increasing volume of trade.

3.2 The objectives of the study

3.2.1 To examine the growth rate and trends in the area, production and productivity of different vegetable crops.

3.2.2 To examine the existing marketing system and to work out the price spread.

3.2.3 To evaluate the production and marketed surplus of vegetable crop at farm level and relationship between market surplus and market arrivals.

3.2.4 To study the role of intermediaries in vegetable marketing in study area.

3.3 Area of the Study

The study has been made in Jhansi division, which comprises three districts: Jhansi, Lalitpur and Jalaun for secondary data and Lalitpur district is selected for primary data.

A multistage stratified sampling method has been adopted to make comprehensive study. Firstly from Lalitpur district three blocks have been selected by random sampling method. From Mehroni block, 50 vegetables growers, from Birdha block 33 vegetables growers, and from Jakhora block 31 Vegetables growers have been selected by stratified sampling method. Thus from Lalitpur district 114 Vegetables growers has been selected. 20 retailers and 22 intermediaries were undertaken for comprehensive study. The reference period was 2012-13 agricultural year.
3.4 Research Methods

3.4.1 Database

The data were used in the present study is secondary and primary in nature.

3.4.1.1 Secondary Data

The present study also contains secondary information (presented in Appendix: B and C). To find out the compound growth rates, trend in arrivals and market prices, seasonal variation of vegetables and Vegetables market price in Jhansi division and its districts secondary data have been used. The data has been compiled from various published government documents of Uttar Pradesh viz. - Agriculture Statistics, Directorate of Agriculture and Marketing, District Agriculture Offices of Jhansi, Lalitpur and Jalaun districts.

3.4.1.2 Primary Data

To examine the existing marketing system and to work out the price spread the data have been collected from Mehroni block 50 vegetables growers, from Birdha block 33 vegetables growers, and from Jakhora block 31 vegetables growers. Thus, a total of 114 vegetables growers have been undertaken for the study purpose from Lalitpur district. For the study of marketing aspect of vegetables price spread 22 intermediaries and 18 retailers were selected from Lalitpur districts.

3.5 Research Tools

To make study unbiased and maintain objectivity the following research tools have been used to collect the primary information.

3.5.1 Schedule
It is used to collect the information from the illiterate price spread Vegetables growers.

3.5.2 Questionnaire

It has been used to get information from those people who were involved in implementation of government policy and to raise the Vegetables growers.

3.5.3 Interview

It was conducted to record the opinions of those peoples who were closely associated with the promotion of production and marketing strategy of Vegetables crop.

3.6 Data Collection

3.6.1 Primary Data

With the help of schedule and interview primary information’s were collected.

3.6.2 Secondary Data

Secondary data have been compiled from following offices / institutions for the Years 2005-06 to 2012-13.
1. Directorate of Agriculture Department: Govt. of Uttar Pradesh, Lucknow
2. Directorate of Marketing: Govt. of Uttar Pradesh, Lucknow
3. Divisional Agriculture Office, Jhansi
4. District Agriculture Office, Lalitpur
5. Naveen Mandi Sthal, Jhansi,
6. Naveen Mandi Sthal, Lalitpur
3.7 Statistical / Econometric Tools

3.7.1 Growth Rates

The growth rates (G.R.) are estimated for area, production, yield and market price. The following formula has been used to work out G.R.

\[
G.R. = \frac{Y_n - Y_1}{Y_n} \times 100
\]

Where,

G.R. = Growth Rate
\(Y_n\) = Current year’s area/ production/ yield/ market (mandi) prices of vegetables crop
\(Y_1\) = Last year’s area/production/ yield/ market (mandi) prices of vegetables crop

3.7.2 Estimating Marketing Efficiency and Price Spread of vegetables crop

The marketing margins, costs or price spreads were calculated during the year 2012-13. To work out the farmer’s share in the consumer’s rupee the total marketing costs incurred by the farmers were taken from the cost they received. The marketing costs such as transportation costs varied from individual to individual and the prices also varied from farmer to farmer because prices mainly depend upon demand and quality of the product. Therefore, average of marketing costs and prices of the selected market for the post harvesting period was considered. The sales price of the common men and retailers were calculated as the simple average of the sale prices reported by the selected traders during the peak period. The marketing costs and margins have been calculated on a per quintal basis.

3.7.2.1 Percentage Margins at Producer’s Prices

The percentage margins for a product at producer’s prices were computed as the ratio of the difference of purchaser’s and producer’s prices to producer’s prices multiplied by hundred (Bawa and Gupta, 1967; Gupta Shakuntala, 1996).
3.7.2.2 Marketing Efficiency

The marketing efficiency of different channels has been worked out through the following formula –

\[ M.E. = \frac{PCR - PPS}{MC} \times 100 \]

Where,
M.E. = Marketing Efficiency
PCR = Consumer’s Retail Price
PPS = Producer’s Selling Price
MC = Marketing Cost

3.7.2.3 Marketing Cost

\[ Tc = C_p + M_{CM} + M_{CR} \]

Where,
Tc= Total Cost of tomato marketing
C_p= Cost incurred by the producer
M_{CM}= Marketing cost incurred by Middlemen
M_{CR} = Marketing cost incurred by Retailer

3.7.2.4 Producer Share in consumer’s rupee

\[ Ps = \left( \frac{Pp}{Pc} \right) \times 100 \]

Where,
Ps = Producer Share in consumer’s rupee
Pp = Producer Price for his tomato produce
Pc= Price paid by consumer

3.7.3 Yearly Index of Arrivals
Index = (Yearly arrival X 100) / Average Arrival
3.7.4 Marketed Surplus and Market Arrivals

This study is based on primary data which has been collected from Lalitpur district of Jhansi division. Mehroni, Birdha and Jakhora blocks from Lalitpur District were selected by random sampling method. From all selected block 114 vegetables growers were selected by the random sampling method in such a way so that they might represent marginal, small and large vegetables grower farms. To verify the validity of the relationship between marketed surplus, production and area under the vegetables crop, all the sample farmers have been undertaken for this study. All gathered information were arranged according to area under crop and classified into marginal, small and large farm size categories. There tabular and regression analysis were made to draw conclusion.