CHAPTER – VI

CONCLUSION

6.1 The primary objective of this study was to evaluate the extent and determinants of integration of markets of food crops viz. rice, potato and cabbage in the Brahmaputra valley of Assam. The study also reviewed agricultural sector in Assam since it was necessary to outline the basic features of the agricultural sector of the state to facilitate intensive discussion of the core problem of the study. This chapter has been designed for drawing the broad inferences of the study and extracting policy implications. However, to facilitate the process, first the principal findings of the study have been summarized. Hence, the chapter consists of two sections. The first section summarizes principal findings of the study. The broad inferences of the study and policy implication of the findings are discussed in second section.

6.2 Summary of Findings of the Study

6.2.1 Extent of Spatial Market Integration and its Changes over Time

The integration among spatially separated domestic markets and its determinants was analyzed by selecting a sample of nine markets of Brahmaputra valley of Assam for rice. In the case of wheat, the sample included eight markets whereas in case of cabbage, the sample included five markets. The sequence of econometric analysis for assessment of market integration has been checking for stationarity of price series; testing for cointegration; testing for causality; and testing for short run disturbances and adjustment mechanism. Coefficient of variation analysis was used to study the change in integration over time. The main results emerging from the study are summarized here-

6.2.1.1 Rice

➢ Out of 36 market pairs of rice, 27 market pairs of rice are found to be integrated in the long run from Johansen bivariate cointegration analysis.
> From Johansen multivariate cointegration analysis, five common trends are found in the price series of rice.
> From both bivariate and multivariate cointegration analysis, it is concluded that the rice markets of the Brahmaputra valley of Assam are moderately linked together in the long run and therefore the long run equilibrium exists.
> A two causation of prices is found between 23 market pairs of rice.
> Kharupetia market is found to be the price leader for the markets whose price changes influence all other markets but its price is found to be influenced by price changes in two markets only.
> The transmission of price signals from one market of rice to another market of rice is found to weak within a week.
> The rice markets are found to be weakly associated in the short run.
> No drastic increase in the level of integration of rice markets is observed over time.

6.2.1.2 Potato

> Out of 28 market pairs of potato, 22 market pairs of potato are found to be integrated in the long run from Johansen bivariate cointegration analysis.
> From Johansen multivariate cointegration analysis, three common trends are found in the price series of potato.
> From both bivariate and multivariate cointegration analysis, it is concluded that the potato markets of the Brahmaputra valley of Assam are moderately linked together in the long run and therefore the long run equilibrium exists.
> A two causation of prices is found between 15 market pairs of potato.
> Guwahati market is found to be the price leader for the markets whose price changes influence all other markets but its price is found to be influenced by price changes in three markets only.
> The transmission of price signals from one market of potato to another market of potato is found to weak within a week.
> The potato markets are found to be weakly associated in the short run.
> The level of integration of potato markets increases in past few years
6.2.1.2 Cabbage

- Out of 10 market pairs of cabbage, 7 market pairs of cabbage are found to be integrated in the long run from Johansen bivariate cointegration analysis.
- From Johansen multivariate cointegration analysis, three common trends are found in the price series of cabbage.
- From both bivariate and multivariate cointegration analysis, it is concluded that the cabbage markets of the Brahmaputra valley of Assam are moderately linked together in the long run and therefore the long run equilibrium exists.
- No bi directional causality of prices is found between market pairs of cabbage.
- No market is found to be the price leader in case of cabbage markets.
- The transmission of price signals from one market of cabbage to another market of cabbage is found to weak within a week.
- The cabbage markets are found to be weakly associated in the short run.
- The level of integration of cabbage markets increases in past few years.

6.2.2 Determinants of Spatial Market Integration

Determinants of spatial integration have been analyzed through LOGIT model. The main findings are –

- If the distance between the markets is less, then the markets tend to be integrated more.
- If the degree of dissimilarity in production between the markets is high, then the markets tend to be integrated more.

6.2.3 Extent and Determinants of Vertical Integration

For this purpose of study, field survey has been conducted in three non contiguous districts of Assam viz., Golaghat, Barpeta and Darrang. The main results emerging from the study are –
The rice cultivating farmers are found to achieve better price realization and hence the extent of vertical integration is found to be high in case of rice.

The potato cultivating farmers are found to achieve moderate price realization and hence the extent of vertical integration is found to be moderate in case of potato.

The cabbage cultivating farmers are found to achieve moderate price realization and hence the extent of vertical integration is found to be moderate in case of cabbage.

The farmers are found to achieve better price realization if they sell their outputs themselves in village huts and markets rather than involving with traders.

Educated farmers are found to achieve better price realization.

Large farmers are found to achieve better price realization.

The farmers of Barpeta and Darrang are found to be in advantageous position in respect of price realization than the farmers of Golaghat.

6.3 Broad Inferences and Policy Implications

The broad inferences of the study may be summed up in the following points:

In general, the spatially separated food crops markets are found to be moderately integrated in the long run. However, the short run dynamic analysis reveals weak association among the markets in the short run.

Distance hinders spatial integration of markets.

Price realization is found to be better in case of farmers cultivating non perishable crops like rice.

Price realization is found to be less and moderate in case of farmers cultivating perishable and semi perishable crops like cabbage and potato.

The farmers are found to achieve less price realization if they deal with traders.
Given these broad inferences from the study, the following recommendations should be in order:

- **Better Road Connectivity:** For higher level integration, road connectivity should be improved. Improvement of the existing roads may improve the extent of market integration in so far as a better road could be considered equivalent to a shorter distance. Therefore the emphasis should not only be on the construction of new roads, but also on the improvement of existing ones.

- **More Storage Facilities:** Decline in storage losses would have two effects; firstly, the farmers would not be forced to sell their outputs in case of perishable and semi perishable crops immediately after harvest time at a low price. Secondly, due to decline in losses, supplies increase proportionately with demand. Therefore, the farmers need more storage facilities. Hence, emphasis should be given more to post harvest technologies such as storage facilities.

- **Organization of Farmers:** Farmers may organize to sell their outputs rather than involving with traders. Reducing the number of middlemen by operating through organization like farmers’ cooperative will increase the share of the farmers in the crops market. The farmers' cooperative could purchase and sell outputs. The profits from sales could be used to maintain existing facilities and a portion should be redistributed among the members. By doing so, the market position of farmers will be improved.