ABSTRACT

SPATIO-TEMPORAL PATTERNS OF AGRICULTURAL MARKETING: A CASE STUDY OF ARARIA DISTRICT (BIHAR)

The role of an efficient agricultural marketing system as a key component for accelerating agricultural production and thereby promoting economic growth in developing countries is now widely accepted. In the past, more emphasis was given to the increase of agricultural production throughout the country under hectarage expansion and improvement in productivity. Issues related with marketing of agro-commodities have usually taken a secondary place. Government is now increasingly becoming aware that agricultural production and marketing are two sides of the same coin.

In India, there is widespread belief among the producers of agricultural commodities that the farming activities, especially, the production of various kinds of food grains have become uneconomic and non-remunerative. Because the ratio of production cost and output price is expanding year after year due to removal of subsidies from agricultural inputs and insufficient marketing facilities available at the time of harvest of crops. Further, a relatively larger margin of middlemen in the consumer’s price of various agro-products is also a common feature, which reflects exploitative nature of oligopolistic and semi-monopolistic practices in agricultural trade, making farmers handicapped. Large seasonal fluctuations in arrivals and prices of the agro-products are another expression of an inefficient marketing system.

The study of actual performance of agricultural marketing, in India in general and in Bihar in particular, however, remains a
neglected area about which a concrete and rational understanding has not been developed. Past studies have given only a general description of prevailing marketing systems for transaction of different commodities in distinct areas. But all these efforts at academic as well as government levels are very much influenced by an economist's macro-level economic understanding of the problem. Thus most of these studies have economic overtones and emphasis. The study of agricultural marketing system in geography deals with micro-level spatial inquiry of agricultural markets. It takes into consideration physical, socio-economic and political factors etc which affect markets and its different aspects. Because the agricultural practices/production and behaviour of marketing of the farm products are the combined effect of space-time and socio-economic attributes of the given geographical area.

The relevance of geographical enquiry of agricultural marketing system is very obvious. The marketing as a process does exist in the geographical space as market centres. The effectiveness of this process is reflected in the various spatial characteristics of market centres, viz. their size, network, connectivity, extent etc. The spatial efficiency, integration, accessibility, expansion and availability of amenities at market centres depend upon location of these centres. Thus the spatial system of market is affected by all the factors physical, social as well as cultural, which interplay at local level. The effect of this local interplay of factors spreads to higher level of spatial hierarchy of markets. Ultimately the economic process and efficiency of the markets are affected by this spatial characteristic of market centres.

A systematic study of the nature of marketable and marketed surplus in spatio-temporal framework with reference to backward and
agriculturally sensitive regions needs to be understood to help in policy making. It is because population of backward region mainly subsists on agriculture and its allied activities. The typical characteristics of Indian agriculture have been the pre-dominance of marginal and small farmers with tiny plots and heavy pressure per unit of land, lower level of productivity and so on. As a result there is highest distress sale and low prices during post-harvest period, while during lean period low arrival of marketed surplus results in high prices of agricultural commodities. The elimination of these problems needs proper policies and their implementation.

The nature of the study selected for research work is of academic as well as of applied importance. Academically, it is going to help in creating new insight to understand agro-marketing in spatio-temporal framework. On the other hand at policy level it would generate data for accurate estimation of existing problem. The study area is essentially an agrarian economy belonging to flood prone region of Kosi plain. Climatically and economically the district is marginal in nature where a primary activity like agriculture is the only main source of livelihood for the people. The marketable surplus is meager in study area as compared to developed areas of the state. It is because of physical and socio-economic characteristics of the study area. Moreover, the farmers who are selling their marketable surplus in the market centres are not in position to get better price, as a result of which they have remained poor. It has affected the economy of study area in particular and Bihar in general.

An efficient movement of farmers’ surplus to consumers will raise their income level and will promote the economic development of study area. The farmers would allocate their comparative advantage to invest on modern agricultural inputs to obtain the
enhanced productivity and production. This, in turn, would contribute to an increasing marketable/marketed surplus of agricultural commodities and inter-regional trade. This would ultimately increase the demand for improved market facilities as a whole.

However, before formulating any such policies to meet these problems, it seems necessary to find out the marketing conditions under which surpluses are disposed off in the market spatially and temporally. Further, it is necessary to identify and quantify the marketing costs and margins that determine efficiency of agricultural marketing system, so that the improvements can be directed towards those factors which are crucial in determining market efficiency. This research problem has its genesis in the observation of general neglect of these issue related with marketable/marketed surplus, and inefficient pattern of agricultural marketing in the region of North Bihar. An understanding of all these factors in a backward and agriculturally sensitive region will provide substantial empirical evidences for the market planners and policy makers to formulate such policies which will be of immense help in increasing agricultural marketing efficiency.

An attempt is made to analyze these problems in the present study. Based on empirical evidence of the study area an attempt is also made to suggest some improvement in the exiting agricultural marketing system through a well designed ‘integrated market development policy’.

With a view to understand and analyze the existing agricultural marketing system in the study area i.e. Araria district (Bihar), the following objectives are to be understood.

(1) To understand the existing agricultural marketing system in the study area.
To estimate the spatial and temporal patterns of marketed surplus of different agricultural commodities in the sampled market centres and villages.

To assess the spatial and temporal patterns of price structure of different agricultural commodities in the sampled market centres.

To find out the marketing costs of different agricultural commodities in the sampled market centres.

To examine the difference in the prices received by the farmers and intermediaries in the market with a view to determine the nature and extent of price spread in the market.

To furnish empirical evidences to market planners to help them formulate relevant and effective policies, and

To suggest a new integrated market development policy for overall agricultural development of the study area.

The following hypotheses have been put forward with a view to infer result regarding the discussed objectives.

1. Seasonal fluctuations in arrivals and prices of agricultural commodities are pronounced in the agriculturally backward areas.

2. The village level sale and distress sale are the result of small holdings and small marketable surplus.

3. Larger is the price spread; greater is the inefficiency in the marketing system, and vice versa.

4. Better spatial integration of market centers at different levels of a marketing channel due to efficient transportation and other infrastructural facilities reduces unnecessary spatial unevenness of marketed surplus.

5. Government intervention in terms of regulation measures leads to higher growth of marketed surplus.

Owing to difficulty in collection of the primary data regarding the marketed surplus and price structure at wider scale the researcher, selected a micro-level region, "Araria district," as the study area. It lies in the extreme eastern part of Bihar along the border of Nepal. It is located between 25° 56' North and 26° 35'
North latitudes and between 87° 3' East and 87° 42' East longitudes, in which 2124831 people inhabit over 2830 sq. kms. area. The study area is divided into 2 sub-divisions and 9 community development blocks for administrative convenience.

Agriculture is the main economic activity in the district. Net-sown area occupies about 65.76 per cent of the total reported area of the district. There are three cropping seasons viz., Rabi, Kharif and Zaid. The main crops are paddy, wheat and maize occupying more than 70 per cent of gross cropped area. Besides, jute, pulses, oilseeds, vegetables and fruits are also cultivated with varying amount of hectarage and production. Animal husbandry is also practiced as a supplementary occupation to agriculture.

The study area has 751 inhabited villages 3 towns, 2 regulated markets and 198 rural periodic markets. Industrially the region is very backward. Cottage and small-scale industries based on forest and agriculture products are the main features. Transportation network is not well developed in the area. Metalled roads approach only 33.73 per cent villages and 25.13 per cent villages have power supply.

The present study is based on both the primary and the secondary sources of data. Primary data have been generated from three tier marketing agencies i.e. village level, periodic market and regulated market. They represent the major components of agro-marketing system in Araria district. Six per cent (45) of total villages and 10 per cent (20) of total periodic markets have been selected on the basis of stratified random sampling technique for detail enquiries. 100 per cent regulated markets (02) are also selected for the survey. The reason is, they are government controlled, and represent regulated agriculture markets in each district of every province of the
country. Further, 10 per cent of producer sellers in all sampled periodic and regulated agriculture markets and 50 households of each sampled village have been selected on the basis of stratified random sampling techniques. They have been thoroughly interviewed for relevant enquiries regarding the various aspects of research problem. Besides, seven more periodic markets, based on some specific consideration like distance from road, location in an urban centre or along the canal and so on, are also being included in the sampled markets. Only six major crops rice, wheat, maize, pulses, potato and onion have been taken into consideration in the present study programmes. The criteria of selection of crops are based on their hectarage, production and quantities of marketable and marketed surplus in the markets.

All the sampled villages were visited before conducting actual survey. In this preliminary survey list of households was prepared and village inhabitants were classified on the basis of size of landholding, i.e. marginal, small, medium and big farmers. Keeping in view total 50 households in each of sampled villages, farmers belonging to different categories according to size of land holding were selected in the proportion, following stratified random sampling technique. The researcher enquired from them about market participants’ socio-economic behaviour at the time of agricultural transaction, mode and volume of transactions of commodities and their specific market channels, and the spatio-temporal patterns of market transaction of agro-products and that of the traders in sampled markets and villages.

In addition to primary data, the study is also based on secondary sources of data which have been collected mainly from the following sources.
The collected data have been processed and brought in to tabular forms. These processed data are analyzed by using simple statistical techniques especially percentage method with a view to derive some specific conclusion regarding spatio-temporal patterns of agricultural marketing of Araria district.

The three tier analysis of agricultural marketing in Araria district, in this study, provides some insight about their relative importance and role in the development and efficiency of agro-marketing. The proportion of marketed surplus of these commodities at village level, in periodic markets, and in regulated markets indicates towards the level of development of agro-marketing system in Araria district. The study highlights that the modernization, efficiency and vigour of agro-marketing is positively dependent upon the uniformity of marketing practices, uniform regulatory provisions, accessibility to bigger market centers, reduction of market margins and of course on post-harvest storage facilities.

Thus as a generalized statement, it can be argued that structural changes in farming practice and marketing of agro-commodities would lead to effective integration of market centers. These market centers under uniform regulatory measures, being accessible to both small and big farmers, would provide better prospect for agricultural marketing. It would enhance overall efficiency of the system as well.

The findings of this study in coming paragraphs would reveal that according to general parameters of efficient agro-marketing, Araria district still has a very primitive marketing system. The greater transaction of agro-commodity at village level and in rural markets
ampl'y proves the point that Araria has to go a long way before any positive change can take place for the general lot of a great majority of marginal and small farmers. As a large number of these farmers is at disadvantageous position, they have no say in the bargain. This inherent unequal power balance between the producers and the intermediaries in the existing system is the real bane of agro-marketing system in Araria which is reflected in, and furthered by, the overall inefficiency of this system.

The agricultural products are marketed through two types of trading system; private trading system (informal agencies) and public trading system (formal agencies). In private trading, the commodities are primarily operated by private traders, like wholesale traders, village traders, itinerant traders, commission agents, etc who purchase the agricultural surplus from the producers at free rate on the basis of price agreement between them and producer sellers.

Under the informal trading it is found that the producer seller sells his produce at the village site to one and several types of intermediaries or brings it directly to wholesale market. It is found from the survey that paddy has been purchased in the largest proportion by mills constituting 59.55 per cent, followed by periodic markets with 8.79 per cent of total transaction performed through different informal marketing agencies. Similarly, rice has its share of 35.96 per cent, wheat 35.96 per cent, maize 25.73 per cent, pulses 51.29 per cent, potato and onion 50.18 per cent respectively of the total transaction in the village markets. This finding shows the overwhelming importance of informal trading system in the marketing of agricultural commodities in Araria district.

On the other hand under formal trading system, public or government agricultural trading system has come into existence with
a view to ensure fair price for producers' surplus as an incentive to increase the production, to supply essential commodities to the consumers at reasonable price, to minimize seasonal fluctuations and to maintain the buffer stock. The main public trading agencies are Food Corporation of India (FCI) and State Food Corporation (SFC). Under formal agencies, regulated markets are one of the most important agencies of agricultural marketing system. They have accounted for transaction of 24.45 per cent of marketed surplus of paddy, 63.4 per cent of marketed surplus of rice, 32.26 per cent of wheat, 74.27 per cent of maize, 48.71 per cent of pulses. Potato and onion have accounted 59.29 per cent and 49.82 per cent respectively. Other government agencies like FCI and SFC purchase only wheat and paddy to minimize seasonal fluctuation of their prices and to undertake procurement for maintenance of the buffer stock.

The village level survey of transaction of the agricultural commodities shows that paddy has recorded highest share of marketed surplus in regulated markets. While in the case of vegetables especially onion, they have been transacted in largest proportion at village market among different market agencies. Maximum transaction at village level is under taken especially by the small and marginal farmers. They have very small size of marketable surplus which discourages them to sell their surplus in distant and specialized agricultural markets, to avoid unnecessarily transport and time costs. The purchase of agricultural produces by consumers directly from growers/farmers house is another important agency of agricultural marketing channel in which the margin of commission agents to consumers’ price is reduced. So both farmers and consumers get benefited. Besides, time of the consumers (usually
agricultural and land less laborers) is saved in which they can earn more wages.

Study area experiences various methods of transaction of agro-commodities at market and farm levels. Undercover, open auction, quotation on samples, private negotiation and close tender are important methods of transaction. The undercover and by quotation on sample methods are practiced only in wholesale periodic markets, whereas, open auction is generally practiced in government control regulated markets. Moreover, in this study various market channels of agro-commodities are also being identified. Generally, marketing of agricultural commodities undergo change of ownership through time and space. The intermediaries are involved in the passing of commodities from producers to ultimate consumers which form marketing channels. Paddy/rice and wheat are having rather complex channels than maize, pulses, potato and onion. It is due to spatio-temporal variations in their demand and supply.

Spatial pattern of marketed surplus of selected crops in the sampled markets show that rice accounts for highest share of 46.63 per cent of total marketed surplus of various agricultural products. It is followed by wheat with 26.45 per cent, potato 10.38 per cent, onion 9.91 per cent, maize and pulses 3.32 per cent and 3.33 per cent respectively. The variation in marketed surplus of different crops in the district is due to variation in demand and supply of these commodities in the region.

Similarly, different types of marketing agencies dealing with agricultural commodities also show variation in their marketed surplus. Regulated and urban periodic markets have highest proportion of marketed surplus in the study area. Analysis shows that the market centers which are well connected with roads and railways
have a higher proportion of marketed surplus. Moreover, the market centers which are located in the eastern and northern parts of Araria district have higher marketed surplus of the agricultural commodities than that of the market centers located in the western side of the district. It is because of well connectivity of eastern and northern parts as well as higher agricultural productivity in these regions. On the other hand lower marketed surplus in the western part of the district is due to lower productivity of crops caused by flood from Kosi river as well as lesser spatial connectivity among the markets. This supports the hypothesis that better spatial integration of market centers at different levels due to efficient transportation and other infrastructural facilities reduces unnecessary spatial unevenness of marketed surplus.

Seasonal arrival pattern is discussed on the basis of three main periods (1) post-harvest period (2) intermediate period, and (3) lean period. The study of the seasonal pattern of marketing of selected crops indicates that the arrivals do not follow any definite pattern during an agricultural year. It is due to the fact that most of commodities have a different growing time during an agricultural year. Study reveals that average arrival of marketed surplus for the district as a whole during post-harvest period is 51.62 per cent and during intermediate period it is 29.40 per cent. Whereas during lean period it constitutes 18.98 per cent. The arrivals of marketed surplus of these commodities vary spatially and temporally, crop-wise and market-wise. Similarly study finds that arrivals of marketed surplus of potato and onion are highest i.e. 57.42 per cent and 55.47 per cent respectively, during post-harvest period. While during lean period the shares of onion and potato are 14.11 per cent and 14.51 per cent of their overall arrivals respectively.
Largest proportion of the arrivals of the marketed surplus of potato and onion during post-harvest period is due to the fact that they are cash crop and of perishable nature as well, hence the farmers immediately wish to sell them. Moreover, highest arrival of marketed surplus of all agro-commodities during post-harvest period indicates that small and marginal farmers sell a large quantity of their surplus, particularly as distress sale, immediately after the crop harvest. The result further shows that seasonality of arrivals is found more pronounced in cash crops than in non-cash crops. It means that producer sellers lack storing facilities and consequently sell their produces in the market immediately after harvest. This supports the hypothesis that there is a wide fluctuation in seasonal arrival of marketed surplus of different agricultural commodities.

The volume of marketed surplus of agricultural commodities in the sampled markets has improved well during the period 1993-2003 at an average annual rate of 3.23 per cent in all the selected markets. General trend of growth of the marketed surplus has been the result of the agricultural development in the study area, through the horizontal and vertical growth in agriculture in terms of area and production respectively, during post-green revolution period.

The growth of marketed surplus is not uniform in every market but varies spatially among the periodic and regulated markets. Maximum growth has been recorded in both the selected regulated markets i.e. 7.66 per cent in Forbesganj and 3.01 per cent in Araria, while in selected periodic markets, marketed surplus varies from maximum 1.83 per cent in Araria Court to minimum 0.79 per cent in Lalokhur. Wide difference in the growth of marketed surplus in regulated and periodic markets is attributed to the fact that market regulation restricts malpractice in the transaction of agricultural
commodities and thus becoming an incentive for farmers to sell their produce there. That is why marketed surplus has increased sharply in regulated markets than the periodic markets. It supports the hypothesis that government intervention in terms of regulation measure leads to greater market efficiency and consequent to it there is rapid increase in the marketed surplus in the regulated markets in comparison to periodic market centers.

A spatial analysis of the marketed surplus of the agricultural commodities at the level of operational land holding indicates that the proportion of sales of all agricultural commodities i.e. rice, wheat, maize, pulses, potato and onion at village level itself is very high indicating thereby the preference of the farmers to sell their produce at their door. The proportion of the total sale at village level for all selected crops as a whole is 39.45 per cent and it varies crop-wise. The larger percentage of marketed surplus of different crops at village level is on account of the poor transportation and communication facilities to carry produce to far-off big markets. However, farmers with largest size of holding (above 8 acres) sell 49.63 per cent of their total surplus in the regulated and urban market centers. While farmers with lowest size of holding (up to 2 acres) have almost negligible presence in these market centers.

A further analysis of the marketing pattern shows that proportion of sale in the specialized market centers rises as the size of landholding increases. It is on account of the fact that the big farmers have large marketable surplus and own means of transportation and therefore they do not find any difficulty in selling their produce in the main market centers. The poor farmers lack transportation facilities and also they have small quantity of surplus to sell in the main market centers. It supports the hypothesis that big farmers are more
dominant in selling their produce in the regulated and urban market centers than the small one.

The overall proportion of marketed surplus of all selected commodities shows that regulated markets and periodic markets have their increased share. But a closer look of the situation reveals that transaction in regulated markets is mostly done by big farmers. Small farmers are found almost negligible in these markets. Thus the advantage of regulated markets disproportionately goes to big farmers skewing the socio-economic equilibrium of the village as well as tilting power leverage in the agricultural marketing system in favour of big farmers and intermediaries.

The variables selected for analyzing the price behaviour of six important agricultural crops namely rice, wheat, maize, pulses, potato and onion, are the wholesale purchase price and wholesale sale price in three different agricultural seasons. The wholesale purchase price refers to that which the wholesalers/commission agents pay to the producer sellers and other selling agencies; whereas the wholesale sale price refers to that which the retailers and other traders pay to the wholesalers/commission agents. From the analysis of the data, it is found that there is wide difference in the wholesale purchase and wholesale sale prices of agricultural commodities between post-harvest and lean periods. It is due to seasonal character of the production and arrival patterns of these agricultural commodities, while their consumption is more or less uniform over different months of the year. It leads to seasonal fluctuations in their prices.

Moreover, crop-wise study shows wide fluctuations in the prices of these commodities. As far as rice is concerned maximum seasonal variations are up to 76.32 and 63.71 per cent in wholesale purchase and wholesale sale prices between post-harvest period and
lean period. For wheat, maize and pulses the maximum seasonal variations in wholesale purchase price between post-harvest and lean period are 37.89 per cent, 27.05 per cent and 20.21 per cent respectively. On the other hand, the maximum seasonal variation in wholesale sale price between these two periods for wheat, maize and pulses are 31.36 per cent, 33.25 per cent, 22.37 per cent respectively. Maximum seasonal variations in wholesale purchase and wholesale sale prices between post-harvest and lean period for potato and onion have been recorded 161 per cent, 126.76 per cent and 152.77 per cent, 112.26 per cent respectively. Potato and onion have recorded maximum seasonal variations in their prices because of their perishable nature and being commercial crops.

The seasonal behaviour of the wholesale purchase price over the space constitutes the most important indicator of the efficiency of marketing system. Spatially, the variations in price do not seem much, however, it varies market-wise. Spatial patterns of price structure of different crops show that regulated and urban periodic markets are having better price structure of the selected agricultural commodities than the smaller and inaccessible periodic market centers. Location and size of market centers play a decisive role in determining the price structure of different agricultural commodities. The result shows that there are not much spatial variations in minimum and maximum prices of the commodities both in regulated and periodic markets. It shows that these markets are very much spatially integrated. Whereas, the seasonal variation in the prices is more pronounced in the markets of Araria district. Besides, another marked feature of the study area is that the seasonal fluctuation in prices of agro-commodities is less pronounced in foodgrains and pulses compare to the cash crops i.e. potato and onion, it is more
pronounced. This supports the hypothesis that seasonal price fluctuation is more pronounced in an agriculturally backward area.

The Araria district is a deficit region of agricultural products, especially, of food crops. It is a consuming market where agricultural commodities are brought and sold by the traders belonging to places outside the district, especially from the terminal markets. Further, from the point of view of the supply side, the crops of inferior quality are marketed here under a situation of compulsions, which are dumped in the market immediately after harvest. This leads to wide fluctuation in the prices. As a result the seasonal variations of wholesale sale price and wholesale purchase price are high. However, a market-wise comparison of price structure of different agro-commodities shows that traders' manipulative grip over the producers and itinerant traders is stronger in interior and smaller markets than their counterparts in regulated markets.

The costs of marketing are expenses incurred in bringing goods and services from producers to consumers. It is found that the costs of marketing of agricultural commodities are high in the study area. The factors responsible for high costs of marketing are too many and these make the agricultural marketing system highly exploitative in character and imperfect in nature. Analysis of the types and variations of costs indicates that the various markets charges; particularly among periodic markets are not uniform and they are mostly charged in an arbitrary manner. These charges not only show large variation but the mode of their payment also differs, which is payable by the sellers in some instances and the buyers in other. The main drawback of these charges is that there is no uniformity or generally recognized rules as to which charges should be payable by sellers and which by buyers. However, in recent years,
the Government of Bihar through the Bihar Agriculture Produce Markets Act, 1960 and its subsequent amendments therein, has made certain provisions under which each market charge has been clearly defined and fixed. But it is practiced only in government controlled regulated markets.

In the present study, the price spread has been estimated by comparing the prices at different levels of marketing with the help of method of concurrent margin. While studying the various components of price spread attention has been focused on producers’ share in the consumers’ price. It is hypothesized that larger the price spread the greater is the inefficiency in the marketing system, and vice-versa. The study indicates that higher marketing costs and price spread is largely on account of high handling and transportation costs, greater loading and unloading charges and high commission charges along with some unspecified charges by intermediaries. A further comparative analysis of price spread of regulated and periodic market shows that the producers’ share in consumers’ price is higher in the regulated markets. It is because of regulatory measures introduced in these markets, and to this extent this may be said as a positive gain of the establishment of the market yard. The study of the net price received by the producer seller through different marketing channels reveals the fact that the direct sale to consumer fetches the highest net price to producer seller. The sale performed through the katcha arhatiya is the next profitable channel for the producer seller. The sale performed through the retailer is the third best channel and much more remunerative as compared to sale taken place through the wholesaler, the village merchant and itinerant dealer. The most important factors which affect the price spread are (a) multiplicity of intermediaries and their profit margin. (b) transport
and storage costs (c) commission and brokerage charges. (d) handling costs etc.

From the above discussion it is clearly evident that agricultural marketing in Araria is varied in terms of space and time with respect to arrival and prices. Market arrival plays an important role in determining price of agro-commodities as it represents supply side. However, the study area is having highly imperfect nature of market due to its oligopolistic tendencies, inadequate system of marketing, and lack of infrastructural facilities. The imperfect nature of the agricultural marketing system has been serving as a serious constraint for the development of the agricultural sector and has resulted in non-remunerative price to the farmers on the one hand and unreasonable price to the consumers on the other. The conditions, under which the farmers dispose of their produce and the price which they receive from them, have significant bearing on their farm activities. It is now commonly believed that the improved marketing facilities contribute to the agricultural development by encouraging magnitude of production. Actual loss of products is caused by the inefficiencies in their movement from the farmers to the consumers, passing through various phases like, processing, storing and transportation of the agricultural products. The variation in the storage costs and loses are very high. Transportation and handling losses also vary with the nature of crop and technique of marketing. The presence of various undesirable market charges and the exploitative behaviour of the traders contribute to higher marketing costs and price spread.

An efficient marketing system encourages increase in agricultural production by reducing the marketing costs incurred by the producers and by lowering the prices paid by the consumers. This expands the market and subsequently brings higher returns to producers. The need for an efficient
marketing system calls for an improvement in existing marketing system. Since the recommendation of Royal Commission on Agriculture (1928) the central government has taken a number of measures to improve agricultural marketing in the country. Among such measures taken by the state government mention may be made of constitution of Agricultural Marketing Section of the Department of Agriculture in March 1935, the Agriculture Produce (Grading and Marketing) Act 1937, regulation of markets, throughout the state, the market development project introduced in 1973 to develop and modernize the agricultural markets in Bihar to take over the wholesale trade in the year 1974 etc. Some of these measures have attained partial success, while others are either completely withdrawn or are in the initial stages of implementation. Even after the establishment of market yard at important places it still remains a dream to achieve the goal of efficient marketing system.

Thus, the present study suggests that in order to promote the efficiency of agricultural marketing and optimal distribution as well as to augment marketable/marketed surplus, an integrated market development policy comprising the following measures should be applied to the marketing of agro-commodities.

First, the government should adopt the policy to increase the agricultural production, with a view to increase marketable/marketed surplus. Although considerable progress has been made, particularly over the last two decades but the production in the state has not yet attained the desired results as anticipated by the state government. A major reason for this disappointing position is that not enough attention has been devoted to provide for the facilities and services which must be available to the farmers if agriculture is to develop. The past government policy is not found any more relevant or effective in present situation, in assisting orderly distribution of marketed surplus and in providing better prices to the farmers for
their produces. The findings of this study indicate that the development of big urban and regulated market does not appear to be fruitful for the small and marginal farmers. A very large percentage of the farmers, particularly small and marginal, find it more convenient to sell its produce in villages and haats. It is thus, clear that rural primary markets including haats are more relevant, and will continue to be so for many years for the great majority of the farmers. With this reality the basic task of the government is to reorient the regulatory measures in favour of periodic markets by providing marketing and credit facilities which alone can protect the farmers from the exploitation of various intermediaries existing between them and the consumers.

Secondly, since the farmers sell the largest proportion of their production during the three/four months immediately after the harvest, stability of harvest price is an important issue for the agricultural production and the marketing decisions. The price which farmers receive during this period influences the proportion of harvested crops sold during this period, as well as their ability to finance next year's crop. The farmers should be assured of at least the minimum price after post-harvest on which they can survive as well as invest for cultivation of a particular crop. This means that there should be an effort on the part of the government to stabilize prices particularly during post-harvest period.

Thirdly, though seasonal fluctuations are not expected to be wiped out altogether from an agricultural market but their effects can be minimized. Large seasonal fluctuation in price causes a hardship on consumers. This also leads to conservative storing plans for the following years. Seasonal price instability encourages speculations by those who are often not experts of market conditions and this
introduces a great degree of uncertainty into the production plans of
the farmers, and the marketing plans of consumers. A financial help
in the form of easy credit and aid to the farmers particularly small
and marginal ones, on the pledge of taking their produce for
marketing can also play an important role in minimizing their
dependency on the intermediaries. Thus, a balanced program should
be attempted to raise and stabilize harvest price while holding within
limits the variability in seasonal price fluctuations.

Fourthly, the present study indicates, the price spread is quite
large on account of various undesirable marketing charges and
arbitrary deductions made by the traders. It, therefore, becomes
imperative that the efforts should be made to increase producers’
share in consumers’ price thereby causing a reduction in the
wholesalers’ and retailers’ margins. However, it is encouraging to
note that the trade margin has fallen after the establishment of the
regulated markets due to abolition of various undesirable market
charges. Still a large number of small and large farmers sell their
crops in periodic markets. There is a need to strengthen this aspect
with the help of the government to reduce the marketing margin in
periodic markets too.

Fifthly, marketing can not be divorced from a consideration
of production process. Farmers need integrated assistance for their
production activities. The problems faced by small farmers in
marketing their output arise basically from the conditions under
which they produce. They borrow even to meet their consumption
needs. Their farm business income is far below the minimum, which
is necessary for bare survival. As they borrow mostly from the
village money-lenders, they are bound to sell their commodities to
them as they have taken loan at the lower interest rates. The
marketing system is dominated by the small farmers therefore government intervention is essential to protect the interest of the farmers by giving loan at right time. The problems of production and marketing need to be tackled simultaneously through integrated agricultural policies. Any one-sided approach is not likely to yield much result.

Sixthly, the organization of cooperative marketing requires additional preference for improving the marketing conditions. Because it will strengthen the bargaining power of the farmers at the first stage of marketing i.e. from the farm to wholesale market. Though, cooperative marketing is not playing any important role in agricultural marketing in the study area, it is possible to inter-link cooperative credit and cooperative marketing to reduce the dependence of farmers on influential intermediaries and money lenders.

Lastly, the findings of this study have a large range of implications. It needs appropriate measures to facilitate the marketing efficiency. Because, there is ample evidence to show that inspite of several measures, agricultural trade has neither experienced a change in techniques of marketing nor the improvement in the marketing conditions of the majority of the farmers. This failure is mainly attributed to the non-adoption of an integrated market development policy and to the lack of positive and facilitating role on the part of the government. The present study, overwhelmingly, shows that markets of Araria district are integrated spatially while temporal (seasonal) fluctuations are pronounced in the arrivals and prices of agro-commodities, however, government controlled regulated markets show some positive impact on improvement of the overall marketing system. The need, therefore, is to supplement the scheme
of modernization of agricultural marketing through a well-designed ‘integrated market development policy’ comprising all the measures as suggested above, in improving the existing structure of market, its functions and performance. Any strategy for the overall development of agriculture appears ineffective, in the absence of an efficient integrated farming marketing system, in the study area in particular and in the country in general.