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RE-VISITING AGRICULTURAL POLICIES IN THE LIGHT OF GLOBALISATION EXPERIENCE: THE INDIAN CONTEXT

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Impact of Market Reforms on Agricultural Growth: A Case of Uttar Pradesh

I

INTRODUCTION

An efficient agricultural marketing system plays vital role in stabilising consumer prices, reducing post harvest losses and improving farmer's income. It also optimises resource use, and facilitates growth of agro-based industry and enhancing value addition. The essential component of improving marketing efficiency is linking the farm gate with retail outlets. In India the marketing system is also changing from traditional retail to modern organised retail. The essential difference between traditional retail and modern organised retail is that in traditional retail, marketing passes through a number of intermediaries, whereas direct procurement or procurement through big procurement agencies is the practice followed by modern organised retail. The success of modern organised retail in agricultural sector depends on strong forward and backward linkages. The high food inflation during the recent year has both supply and demand side explanations and it calls for increased production and also investments in post-harvest marketing, and management of food commodities to reduce losses and improve efficiency of supply chains through favorable policies. Supply chain management is more important in the sector of agribusiness because most of the agricultural products are perishable and have a very short shelf life.

Agriculture being state subject, federal government only suggests state government on various policy issues and state government has to implement the policies/reforms in agricultural sector. Agricultural marketing in the country was regulated under government control, which continued after independence also. Realising the imperfection in agricultural marketing system, Government of India circulated a Mandi Model 2003 to all states with suggestion to amend APMC Act in line with the Mandi Model Act. The proposed Model 2003 proposed, direct purchase of agricultural produce from producers, Public Private Partnership in management and development of agricultural markets, Consumer/farmer market (Direct sale by the producer), Contract farming, unified license, establishment of specialised markets and single point levy of market fee etc. Marketing of agricultural produce in the state is regulated under Agricultural Produce Market Committee (APMC) Act 1964.

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Government of Uttar Pradesh has not amended its APMC Act in line with the Model Act 2003. Therefore it becomes necessary to examine the policy changes and perceptions of farmers, traders regarding present marketing system of agricultural produce, so that the necessary policy reforms can be brought out to improve the competitiveness in the market which is required for efficient functioning of modern organised retail. Keeping in view the above conditions, this study was undertaken with following major objectives:

Objectives

(i) To review the changes in APMC policy of the state since its inception and market access in the state,
(ii) To examine the growth in arrival and revenue of APMC,
(iii) To analyse the growth in corporate investment in agriculture and agricultural growth,
(iv) To study farmers' perception regarding present marketing system and consumer's perceptions regarding modern retail outlet,
(v) To examine the market infrastructure across different markets in U.P.

II

METHODOLOGY

Sampling Design, Data Sources & Period

There are 29 states in India and Uttar Pradesh being the largest agrarian state of the country was selected purposively.

To examine the farmer's perception, primary data was collected from randomly selected 70 farmers and 20 consumers from Varanasi and Azamgarh district of Uttar Pradesh. Secondary data on total arrival of agricultural commodities in APMC market and revenue of Mandi Board Uttar Pradesh was collected from State Marketing Board for 40 years period i.e. 1972-2012. Data was divided into two time periods, pre liberalisation period (1972-1991) and post liberalisation period (1992-2012).

The data related to infrastructure was collected from six primary markets and 12 secondary markets. Two primary markets, viz., Varanasi and Azamgarh from eastern Uttar Pradesh and two from western zone, viz., Agra and Bareilly, Jhansi from bundelkhand, Kanpur from central zone along with two secondary markets from the area of each selected primary markets were selected randomly.

Analytical Tools

The exponential function ($Y = ab^t$) was used to examine the growth in arrival and revenue of Mandi Board. Where Y = dependent variable (it may be arrival or revenue), t = independent variable (it is a rank given to the year concerned. Ranking

of year was done in ascending order), a = functional coefficient used in exponential function, and b = compounding coefficient.

To find out the infrastructure index, the infrastructure was categorised into following three categories and the related data was collected from concerned mandi offices : trade related infrastructure: common covered auction halls, common open auction platforms, common drying yards, weighing equipments, grading equipments, rate display boards. Infrastructure for storage and processing: warehouses, cold storage, processing units, storage godowns, support infrastructure**,** farmers rest rooms, canteen/tea shops, common utility (washrooms etc), water supply, parking facilities, banks, post office, police and security posts.

Infrastructure development index was computed as a weighted average of various components of infrastructure services where the weights vary inversely to the variation of the components.

$$Yij = \frac{Xij - Min\ j\ Xij}{Max\ j\ Xij - Min\ j\ Xij}$$

where, Yij is the standardised value of a marketing infrastructure indicator. X_{ij} represent the value of the i-th infrastructure development indicator in j-th mandi.

$$Y_j = W_1Y_{1j} + W_2Y_{2j} + \ldots + W_mY_{mj}$$

where the weights W_i vary inversely as the variation in the respective indicator of the infrastructure services:

$$0 < W_i < 1 \text{ and } W_1 + W_2 + W_3 + \ldots + W_m = 1$$

$$Wi = \frac{K}{\sqrt{Variance}\ Yi}$$

$$K = \left[\sum \frac{1}{\sqrt{Variance} Yj}\right]^{-1}$$

III

RESULTS AND DISCUSSION

Review of APMC Policy of the State:

Marketing of farm produce is governed by Agriculture Produce Market Committee Act (APMC) 1964. As per this policy, no bulk purchaser can purchase farm produce in bulk directly from producer. The producers have to bring their produce in APMC mandi, where the buying and selling between farmers and

registered traders is done through commission agent. In this exchange process, government collects mandi fee, which is a source of revenue.

Realising the required changes in agricultural marketing policies, in the era of Liberalisation, Privatisation and Globalisation (LPG), the Government of India circulated a Mandi Model 2003 to all states with suggestion to amend APMC Act in line with the Mandi Model Act. The proposed Model 2003 includes, direct purchase of agricultural produce from producers, Public Private Partnership in management and development of agricultural markets, Consumer/farmer market (Direct sale by the producer), Contract farming, unified license, establishment of specialised markets and single point levy of market fee etc. Government of Uttar Pradesh has not amended its APMC Act in line with the Model Act 2003. A critical review of all provisions of existing APMC Act 1964 indicated that no visible modification in the policy has been made during last 50 years in order to exploit the opportunities of trade liberalisation. Only selected two/three bulk purchasers have been permitted to procure wheat and rice directly from farmers. There are modern organised food retail format like Big Bazar, Spencers, Vishal Mega Mart, etc., operating in the state, but they are not permitted fruits and vegetables directly from farmers (Mishra 2012). Therefore, they are not able to reduce the number of intermediaries in the new system rather, the number of intermediaries have increased in the system.

It is evident from Table 1 that on an average one market caters the need of more than 42000 farmers and the geographical area covered by each market is more 400 sq kilometer. It increases the marketing costs of farmers, who are forced to sell their produce in the APMC market only. Producers in the state have no access to alternative marketing channels, which has given a scope to the emergence of large number of intermediaries and pre harvest contractors of the farm output.

TABLE 1. COMPOUND ANNUAL GROWTH RATE (PER CENT) OF ARRIVAL AND REVENUE DURING 1985-2012

Period (1)	Arrival (2)	Revenue (3)
1985-1999	2.81	15.58
2000-2013	4.74	12.16
1972-1991	9.40	16.30
1992-2012	3.84	10.70

Source: Compiled and calculated from Data of Mandi Board Uttar Pradesh.

It is concluded that presently the market is functioning under imperfect condition which is not capable to improve efficiency of agricultural marketing system in the state.

Growth in Arrival of Agricultural Commodities and Revenue of Mandi Board of Uttar Pradesh India

Analysis of 40 years data (1972-2012), which was divided into two phases is presented through figure 1 to 4. It is revealed from Figure 1 and 3 that the Compound

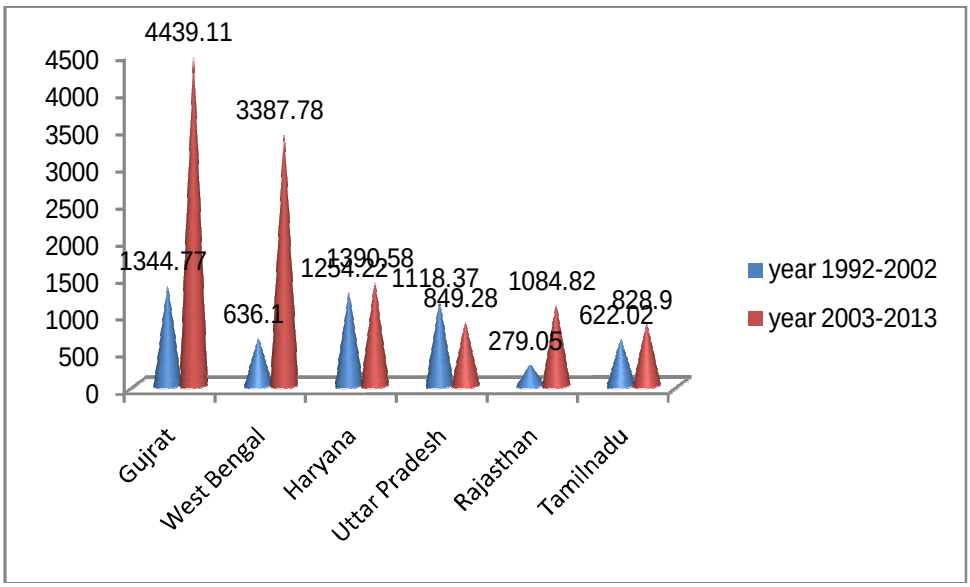
Annual Growth Rate (CAGR) of total arrival of agricultural commodities in all APMC markets of state was lower (3.84 per cent) during the era of liberalisation as compared to pre liberalisation era when CAGR was found to be 9.41 per cent. It may be because the small and marginal farmers prefered to sell village bania rather than going to APMC market located far away from the production area. The markeatable surplus during the period of post liberalisation was higher than the preliberalisation period. It was well reflected in the growth of revenue realised by Mandi Board Uttar Pradesh. The CAGR of total revenue was also found lower (10.72 per cent) during post liberalisation period as compared to 16.30 per cent CAGR during pre liberaliastion period. Since the agricultural marketing policies in the state were not amended during post liberalisation period, thereore it created an scope of the emergence of illegal trade by unregistered traders out of notified area of Mandi Board resulting increase in the number of intermediaries in the supply chain. Even sometimes farmers do not get minimum support price announced by government. A nexus of local traders with farmers have been developed and traders fulfill the credit needs of farmers resulting farmers sell their output to traders at lower and unremunerative price.

Therefore, it was concluded that the restrictive policy does not lead the growth of mandi board revenue and arrival.

Private Corporate Investment in Agriculture and Agricultural Growth in Uttar Pradesh

With a view to attract corporate investment and imrove competetivness in the market, Government of India has permitted FDI in retail sector and is planning to set up a National Agricultural Market. The growth in employment and income is directly related to investment (public or private). In this study the corporate investment in agricultural sector was analysed for two time period and it was found that the coporate invetsment in agriculture has declined during 2003-2013 as comapred to 1992-2002. It is evident from Figure 1 that corporate investment in agriculture has increased in states like Gujarat, Rajsthan, Tamil Nadu, West Bengal and Haryana where policies have been liberalised. It was also found that investment made by corporates in Uttar Pradesh are mainly consentrated towards the field of dairy and vegetable oils only. Investment by corporate sector is adversely affected by government policies and other environment. In 2007 Relaince retail a major corporate player moved from the this state because of restrictive practices adopted under APMC Act, which did not allow any bulk purchaser to procure agricultural commodities directly from producers. It had negative impact on corporate investment (Singh *et al*., 2009).

Uttar Pradesh, with an area of 2,40,928 sq. kilometer is the fifth largest state in India and occupies 7.3 per cent of the total area of the country. The state ranks first in the country with a population of 199.5 million and population density of 828 per sq.



Source: Calculated from data of Udyog Bandhu (Ministry of Industry Uttar Pradesh).

Figure 1: Corporate Investment in Agricultural Sector During 1992-2013

kilometer. The state is divided into 75 administrative districts under 18 divisions which are broadly classified into four economic regions, viz., the Eastern, Western, Central and Bundelkhand regions. There are 216.68 lakh operational holdings in the state of which, proportion of small and marginal farmers are 14.5 and 76.9 per cent. The average size of operational holdings is only 0.75 ha which is lower than the country's average of 1.16 ha. The economy of the state is predominantly agrarian with 77.7 per cent of population living in rural areas, mainly dependent on agriculture for their livelihood. The state is a large contributor to the food basket of the country has an economy characterised by low productivity, high incidence of poverty and wide gap between the state and national per capita income.

As evident from Table 2 that economy of Uttar Pradesh, India is agrarian based where more than 23 per cent of Gross State Domestic Product (GSDP) comes from primary sector. The average annual growth rate (AAGR) of agricultural GSDP in the state during 2000-2011 is only 2.1 as compared to national average of 3.2 per cent. It may be concluded that growth of agricultural sector has been affected adversely because of low investmnet in this sector.

Farmer's, Consumer's and Modern Retailer's Perception

Farmers are the main stakeholders of any agricultural marketing systems and we documented the perceptions of farmers on various issues which are summarised in Table 4. Majority of farmers (92 per cent) were found highly dissatisfied with the present marketing sysyetm. More than 96 per cent farmers claimed that the prcatices

TABLE 2. MARKET ACCESS IN UTTAR PRADESH, INDIA

Indicators (1)	Numbers (2)
No. of farmers per primary Mandi	91716
No. of farmers per secondary Mandi	77726
No. of farmers per total Mandi	42072
Area (ha) covered by one primary Mandi	96682
Area (ha) covered by one secondary Mandi	81934
Area (ha) covered per Mandi	44350
Coverage of geographical area (sq. km)/primary Mandi	964
Coverage of geographical area (sq. km)/ secondary Mandi	817
Coverage of geographical area (sq. km) Mandi	442

TABLE 3. GROWTH OF AGRICULTURAL SECTOR (2000-2011)

State (1)	AAGR of agriculture GSDP (2)	Share of agriculture in overall GSDP (3)
Maharashtra	5.0	8.5
Haryana	3.4	16.7
Gujarat	9.6	12.7
Andhra Pradesh	4.7	20.8
Karnataka	3.1	16.6
Chhattisgarh	9.0	19.2
Rajasthan	9.9	22.7
Odisha	4.7	17.6
Jharkhand	6.8	15.1
Madhya Pradesh	6.6	22.6
Uttar Pradesh	2.1	23.0
Bihar	2.5	26.6
All India	3.2	14.5

Source: www.agricoop.nic.in.

TABLE 4. FARMER'S PERCEPTION REGARDING MARKETING SYSTEM (N=70)

Particulars (1)	Highly satisfied (2)	Satisfied (3)	Highly dissatisfied (4)	Undecided (5)
Marketing procedure and mechanism	0	8	92	0
Weighing of produce (weighing system)	2	98	0	0
Auction platform	10	90	0	0
Cleaning and grading mechanism	0	4	78	18
Marketing fee	0	98	2	0
Behaviour of market officials	0	0	68	32
Availability of storage and godowns	0	36	38	26
Cold storage/ware houses	0	40	36	24
Marketing Mgmt during rainy season	0	94	6	0
Payment mechanism	0	86	14	0
Transparency regarding prices	0	2	98	0
Exploitative practices by traders, if any	0	4	96	0
Boarding/lodging	0	18	64	18
Cleanness in the market	0	0	86	14
Market information sharing among the farmers	0	20	72	8

Source: Authors' own calculation based on surveyed data.

followed by trader under present marketing system wrere exploitative and prices were not transperent. They were found satisfied with the payment system, weighing mechanisms, auction platform and the prevailing market fee (2.5 per cent of the value of the produce borne by traders).

One of the leading food retail 'Spencer' has its outlet in the study area without backward linkages with farmers (not permitted in the state) and have a good number of consumers. The establishment of backward linkages with farmers has a capacity to improve the economic condition of small and marginal farmers in India (Mangla and Chengappa 2008). Consumers, which are second important stakeholders of agricultural marketing system were interviewed for their perception about modern organised retail outlets and the results are summarised in Table 5. It is evident from Table 5 that consumers were most influenced to reasons like proximity (90 per cent), good services rendered by modern retail outlet (85 per cent), visual merchandising and store design (85 per cent), quality of produce (80 per cent) and reasonable price (70 per cent).

TABLE 5. CONSUMER'S PERCEPTION REGARDING MODERN ORGANISED RETAIL

		Modern (n=20)	
S. No.	Reasons	Total number of consumers	Percentage to total number of Consumers
(1)	(2)	(3)	(4)
1.	Timely availability	16	80
2.	Proximity	18	90
3.	Quality of produce	16	80
4.	Timing	8	40
5.	Common phobia to enter multinational stores		
6.	Visual merchandising and store design	17	85
7.	Promoted by promotional tools	10	50
8.	Advertisement	6	30
9.	Wide range of products are available	11	55
10.	Reasonable Price	14	70
11.	Discount price	2	10
12.	Good services rendered by the outlets	17	85
13.	Better packed Vegetables which are very good	12	60
14.	Better suited time	4	20

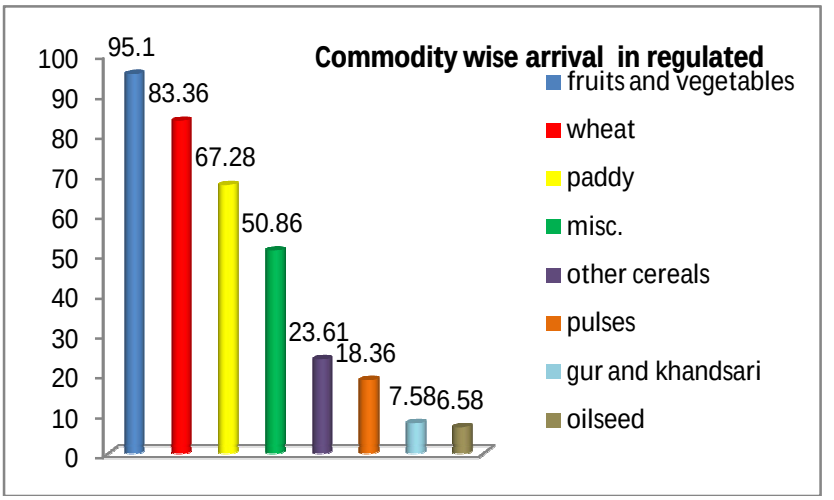
Source: Authors' own calculation based on surveyed data.

Therefore, it was concluded that the farmers were highly dissatisfied with the present agricultural marketing system and consumers prefererence towards modern retail outlets are high.

Availability of Major Market Infrastructure and Market Infrastructure Index in APMC Markets, Uttar Pradesh

Fruits and vegetables are among the major agricultural commodities traded in regulated mandi (Figure 2). Post harvest losses are between 30- 40 per cent in fruits and vegetables (Murthy *et al.*, 2004 and Patnaik 2011). Being perishable in nature, fruits and vegetables require specialised infrastructure. However, no cold storage was found in any regulated mandi, where unsold fruits and vegetables can be stored. Prices of agricultural commoditeis were also not displyed on the board. State needs an addional storage capacity of more than 8 million tonnes to reduce the post harvest

losses. These godowns should be established in rural area, which will reduce the trnsportation cost and post harvest losses.



Source: Report of Mandi Board Uttar Pradesh 2013.

Figure 2: Commodity Wise Arrival in Regulated Mandies (2012-13).

It is evident from the Table 6 that Varanasi primary market possesed highest trade and support infrasructure followed by Agra and Kanpur. However in storage infrastrucure index is highest in Bareily followed by Agra. It aws found that the all secondary markets are very weak in all kind of infrasrutures, viz., trade, storage and support.

TABLE 6. MARKET INFRASTRUCURE INDEX IN APMC MARKETS, UTTAR PRADESH

Name of Market (1)	Trade (2)	Storage and Processing (3)	Support (4)
Kanpur*	0.55	0.24	0.50
Kidwainagar**	0.34	0.07	0.50
Uttaripura**	0.33	0.14	0.48
Varanasi*	0.80	0.33	0.95
Adalpura**	0.16	0.04	0.36
Danganj**	0.25	0.04	0.41
Azamgarh*	0.51	0.31	0.54
Lalganj**	0.18	0.05	0.18
Atrauliya**	0.16	0.05	0.32
Jhansi*	0.45	0.15	0.34
Chirgaon**	0.11	0.05	0.18
Ranipur**	0.25	0.03	0.26
Agra*	0.71	0.36	0.24
Irdatnagar**	0.25	0.16	0.40
Kagraul**	0.12	0.08	0.25
Bareilly*	0.40	0.48	0.70
Faridpur**	0.13	0.17	0.18
Nawabganj**	0.14	0.11	0.33

Source: Authors' own calculation

*Represents Regional Primary Mandi (RPM), **Represents Regional Secondary Mandi (RSM).

It is suggested to improve infrasructure in all secondary markets so that post harvest losses can be minimised and efficiency can be improved.

IV

SUGESSTION

On the basis of the findigs of this study it is suggested that the state government should ammend its APMC Act in order to improve the competeivness in the market, attract corporate investment in agriculture. The establishment of backward linkages through policy changes will facilitate the functioning of modern reatil system which will finally satisfy the producers as well as consumers.

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