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INDIA'S AGRICULTURAL MARKET INFORMATION SYSTEM NETWORK

"India's Agricultural Marketing Information System Network (AGMARKNET)"

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Summary

Agrarian economy has numerous players, agents and stakeholder; all seek information for taking rational decisions for their respective roles and objectives. A majority of them are engaged in the supply chain of commodities from production to end use. They The institutions including Government with the agenda of development, growth, sustainability, security, well being and other economic and policy priorities also depends on data and statistics for informed decision making.

Amongst the information most sought after, across the sections of people and stakeholders including by those not directly engaged with the agrarian economy, such as consumers, are on prices of agricultural commodities and quantity of produce. Price is one of the most complex and volatile variables, particularly in the context of farm sector, given the diversity of commodities transacted over vast geographic space at different points of time and at different stages from farm gate to retail outlets. Accordingly, agricultural commodity prices are considered to be the core element of Agricultural Marketing Information System (AMIS).

In case of Indian agrarian economy, which has over 120 million farm holdings, mostly small and marginal ones, with low degree of market integration and connectivity, accessibility of reliable and timely information by farmers on prices of commodities of their interest is integral part of agricultural development strategies. In the recent decade major initiatives have been taken to establish IT enabled AMIS network "AGMARKNET", interlinking more than 2000 agricultural produce markets covering about 300 commodities for regular recording and dissemination of prices and arrivals. Besides, alternative models of commodity price dissemination to farmers are getting evolved in emerging B2B (Business to Business) framework in farm sector. The present paper attempts to provide a snapshot of AMIS in India and its contribution to farmers.

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1. INTRODUCTION

The weak integration of production with market has been one of the handicaps of Indian farm economy. This weakness has been rooted in the length and breadth of its domain. This has persisted due to the inadequacies in market infrastructures, marketing system, market orientation and rural connectivity for quite some time after independence. The growth in the farm sector with the onset of green revolution in mid sixties led to augmentation of marketed surpluses and stimulated farm entrepreneurship. Consequently, the development of agricultural marketing became integral to the strategies for over all development of agriculture sector. This process envisaged, besides development of markets and marketing infrastructure, strengthening and improving overall agricultural marketing system with a view to enhance market efficiency, its forward and backward linkages and to bring agricultural produce markets closer to farmers so that they can sell their produce without price disadvantage. The domain of this endeavour is more than 120 million farm holdings spread over 600 thousand villages growing a large range of crops and farm produces in about 190 million gross cropped area, catered by more than 7000 agricultural produce markets and about 22,000 rural primary markets (RPM). These RPMs are often the first contact of farmers with markets.

One of the milestones in the process of agriculture marketing development was the institutionalization through the Agricultural Produce Market Committees (APMC) in the regulatory framework. The modal framework of APMCs envisaged autonomy with democratic formation, farmers' representation and state facilitation for development of infrastructure, expertise and resources in their respective notified jurisdiction. This brought broad uniformity in the system of marketing in the federal states. Thus, APMCs provided institutional network of marketing system. Strengthening and streamlining of agricultural marketing information system (AMIS) was inbuilt in the mandates of APMCs

Establishment of a healthy marketing system with transparency of transactions which is fair to sellers (mostly the farmers and other producers of agricultural commodities) is one of the most important provisions made under the functioning of APMCs. In the supply chain of farm produce, from farm to consumption outlets, it is generally the farmers who are unorganized and sparsely distributed over vast geographic domain. The intermediaries in the supply chain are better organized and in turn have better access to information on prices, arrivals and prevailing market situation. The transparency of marketing operations under the regulatory framework of APMCs provided a needed fillip in the void of market intelligence at the producers end.

2. Essence of AMIS

The agricultural marketing functions become relevant with the commencement of supply chain at the farm gate. The two ends of the supply chain are the vast domains of stakeholders, farmers / producers at one end and the consumers / end users on the other. Incidentally both these domains are least organized and least networked. In between are several players, intermediaries and other stakeholders with respective roles, functions and objectives. Then the institutions, including Government also need data and information for their agenda of development, growth,

sustainability, security, inter and intra sectoral linkages and overall well being of the people. They all require information and data of their respective interests for taking informed decisions.

The main decisions that the farmers generally take are on what to produce, where to sell, when to sell, how to sell and at what price. The most sought after information from AMIS are the prices and quantity of commodities with specification at the numerous transactions at different locations and time. The Agricultural Market Information System thus needs to be conceived in both the contexts of the user's capacity to infer the information and also in the manner of dissemination, format, and language for understanding of users.

Accordingly the main purpose, scope and use of AMIS was aptly summed up by the Working Group on Marketing Infrastructure and Policy Required for Internal and External Trade for 11th Five Year Plan (2007-12), (Planning Commission of India – 2007) are summed up as

- ☐ To disseminate accurate and timely marketing information so as to support in marketing decision making and marketing efforts of entrepreneurs, farmers, government, development organizations, academicians, and researchers.

- ☐ To help in ensuring that produce goes to markets where there is a demand for it.

- ☐ Enable shortening marketing channels and cuts down on transport costs, and helps ensure that each marketing transaction is a fair one, and that all participants share the risks and benefits. *However, this does not happen if marketing information is distributed unequally, as is generally the case when many small-scale farmers in are selling to a relatively few large-scale dealers. The farmers then end up bearing the greater part of the risk, while the dealers end up with the greater part of the profits. Farmers must be able to seek out and compare the information available for different outlets if they are to sell to best advantage. Price information is less useful if there is only a single market outlet, or if farmers are price takers rather than price seekers.*

- ☐ Where there is a very wide gap between the farm gate price and the price paid in wholesale markets and by consumers, marketing information can help narrow the gap, but only as part of an efficient marketing system.

  The Working Group identified the ideal AMIS to be responsible for:

  - sourcing all the market data/information being collected by various agencies;
  - initiating collection where it is nonexistent and strengthening existing collection procedures;
  - processing and analyzing such data/information to turn it into useable knowledge; and
  - developing mechanisms/systems for information/knowledge dissemination through various media such as radio, TV, newsletters, bulletins, and websites.

Accordingly, the needed categories of information (Knowledge Objects) are as follows:

- Daily/weekly retail and auction prices;
- trends in aggregated auction prices, retail prices, quantity traded through auction, export, import, and production;
- information on farm inputs (types, sources, and selling price);
- description of prevailing market conditions (supply and demand situation);
- information on marketing and post-harvest practices;
- information on existing food standards and regulations;
- market situation and outlook reports (annual report);
- market research and development reports;
- investment advice and success stories in agribusiness;
- relevant information/news on export markets in the region; and
- a directory of existing exporters and importers.

3. Agricultural Marketing Information Network (AGMARKNET)

(Sources: Ministry of Agriculture, Govt. of India, 2009, www.agricoop.nic.in and www.agmarket.nic.in)

AGMARKNET is made operational by Ministry of Agriculture in March, 2000 under its centrally sponsored scheme "Marketing Research and Information Network Scheme" being implemented through Directorate of Marketing and Inspection in collaboration with National Informatics Centre, State Agricultural Marketing Boards/ Directorates and APMCs.

The objective of the scheme is to facilitate collection and dissemination of information for better price realization. The scheme provides funds to State and National level institutions managing the markets and executing market led extension activities. The portal covers Market related, Price related, Infrastructure related and promotion related information for efficient marketing. Distinctive features of AGMARKNET are:

a) Internet based nationwide information system providing "single window" service, catering to diversified demands of information.
b) It facilitates speedy collection, dissemination and sharing of information and development of data infrastructure for enterprises, industry, farmers, policy makers, academic organizations, government agencies, etc.
c) With development of information and data, infrastructure established at market places perform role of information service providers.
d) It encourages information exchange and dissemination for the benefit of farmers and other market participants as well.
e) Online marketing information service connects distant markets and promotes the efficient marketing.
f) Sensitize and orient farmers to respond to new challenges in agricultural marketing by using IT as a vehicle of extension

g) Provide assistance for marketing research to generate marketing information for its dissemination to farmers and other marketing functionaries at grassroots level to create an ambiance of good marketing prices in the country.

The range of Market Information products on AGMARKNET

1. The markets are reporting data relating to daily prices and arrivals using a comprehensive national level database at Agmarknet Portal (http://agmarknet.nic.in) (Exhibit-1).
2. Wholesale prices and arrivals information in respect of more than 300 commodities and 2000 varieties are being disseminated through the portal on daily basis (Exhibit-2).
3. More than 2200 markets have been linked to the Central Agmarknet Portal
4. Movement of weekly prices and arrivals are also being disseminated using the portal.
5. Monthly prices and arrivals bulletins are being generated using the national database.
6. Market profile of connected markets detailing market related information such as market charges, transactional methods, market functionaries, market laws, etc., (Exhibit-3)
7. Infrastructure related information comprising of facilities and services available to farmers with regard to storage and warehousing, cold storage, direct marketing, grading, re-handling and repacking, etc. and
8. Other market related information such as accepted standards /grades, labeling, sanitary and phyto-sanitary requirement, physical infrastructure of storage and warehousing, marketing laws, fees payable, etc. (Exhibit-4)
9. Efforts are on to prepare a National Atlas on agricultural markets on a GIS platform that would indicate the availability of entire marketing infrastructure in the country.
10. Commodity profiles are being loaded on the portal. Commodities already covered include, Rice, Wheat, Bengal Gram, Black Gram, Red Gram, Mustard / Rapeseed, Groundnut, Soya bean, Sunflower, Sesame, Green Gram, Potato, Maize and Sorghum.
11. Linkages with various organizations concerned with agricultural marketing.
12. Spot and future prices, Minimum Support Price (MSP) and international commodity prices.
13. Information about schemes of DMI, weather information, e-directory of markets, CODEX standards, etc.
14. The prices and arrivals information are being disseminated in nine languages.
15. The data base developed under Agmarknet is also serving various Commodity Directorates of the Department of Agriculture and Cooperation by providing customized hyperlinks to data pertaining to specific commodities.

The broad project components:

- Computing Facilities and Networking
- Development of Human Resource
- Development of Database and contents
- Information Transmission
- Portal on Market Information

Budget (2007-08): Rs. 34 millions

4. AMIS benefits to small and marginal farmers

AGMARKNET is a user-friendly, single window on IT platform that provides a wide range of comprehensive and standardized information on diverse aspects of agricultural marketing. Not all information is needed by everyone at every point of time. AGMARKNET is *Just in Case, Just in Time* agricultural decision support package for all those stakeholders who seek information.

AGMARKNET is the information gateway or a nationwide mega information mall for the users to drive in to hop (not shop) for information. There are several institutional initiatives, largely under extension programmes, such as Kissan Call Centers (toll free farmers information service available in 16 languages) are served by AGMARKNET.

Advent of AGMARKNET has created consciousness amongst the APMCs to update and download the information on the portal. In turn individual APMCs have improved their MIS activities. Periodic and regular updating of information in standardized formats is the essential primary step for its dissemination. Several of the APMCs have also improved their dissemination facilities with electronic display and live relays of auctions and AGMARKNET links.

Agricultural produce markets are also the agents of change. Besides the location for transaction of commodities and its handling, these markets are also the convergence and meeting point of farmers and in a typically active market, the scenes of farmers sitting together and exchanging information is a common phenomenon. In the Situation Assessment Survey of NSS (2002-03), it was found that the other progressive farmers are the most important source of information and farmers have confidence on this kind of fellow feedback. This trend of information sharing has been inbuilt in the agricultural extension system and ATMA (Agricultural Technology Management Agency), the evolved extension driver has larger role of farmer to farmer extension. Strengthen AMIS stimulates and refines this process.

Information empowers. Also the empowered have better access to information. Thus the access to information and dividends of such access are likely to be uneven. On this analogy, small and marginal farmers are also marginalized on their accessibility for information. What is the tradeoff for the marginal farmers with marginal marketable surplus with his effort for information and the options to use in his decision making and decision implementations? *The advantages of reforms in agricultural marketing, minimum price scheme, contract farming or crop/income insurance will flow to the farmers only to the extent farmers organize themselves in marketing groups, self-help groups, cooperatives or companies and learn skills suited to the new marketing environment* (Acharya 2004).

In the context of availability of information, awareness on the scope of its use and opportunity to meaningfully use it in the market environment, it becomes important to bring meaningful change in the post harvest linkages of the small and marginal farmers. In the absence of farm level convergence with business / market orientation, it is the business that reaches to farmers proactively and not otherwise. Therefore, traditionally the trading relations of the farmers with either the upstream input suppliers or with the downstream retailers and distributors had not been on parity and equal footing. Further the B2B format also seeks its economy of

scales, aligning towards large and medium sized farms. Small and marginal farmers are more prone to be in the seller's market, while the large farmers, may be fortunate to find themselves in the buyer's market.

Against the aforesaid dichotomous postulation of market and use of AMIS amongst the small and large farmers, the B2B model "E- choupal" of Indian Tobacco Company (ITC), a large agribusiness firm, has involved the farmers as the important partners in supply chain of agribusiness in the dominant producing region. The E- choupal recognized the distribution of supply chain in the large domain of villages comprising small farmers with small marketable surpluses. It is a new business model, linking the rural communities with marketing information and support system provided through its rural connectivity points E- choupal. Choupals, a meeting place in rural India, were targeted as the point of entry into the rural households for dealing in ITC products. ITC is currently operating 6500 e-choupals covering 40000 villages and benefitting 4 million farmers. Most of the villages are in semi arid regions of the country (www.echoupal.com).

5. **Main features of "ITC E-choupal"** *(adopted from Surya N. Binayee 2005: Marketing Information System: An overview of agriculture marketing system in South Asia):*

Target users, marketing need, and interventions: ITC targets the areas from where it has already been buying agriculture products for its MIS Activities. The villages fairly accessible for market support and with population in between 1,000 to 5,000 are selected. Farmers, who lacked marketing information about their products, were at disadvantaged situation and often reaped off by the middlemen. They needed not only the marketing information like price, demand, and quality, but also the alternative channel of marketing. Besides, the agricultural marketing system needed to address the problem of long marketing channels sapping the profit margins, fragmented and dispersed rural agriculture market, and weak infrastructure. To address this, e-Choupals system aggregates the supply and demand of the thousands of farmers; offers direct business links to ITC; provides marketing information about the products of farmers; and lets the farmers explore the competitive offers.

MIS/business model: In the selected villages, ITC sets up internet kiosks and transforms them into e-Chouplals. For those places, which face shortage of phone lines and electricity, ITC provides VSAT satellite links and solar batteries. Selected farmers are trained on use of the system. Educated, entrepreneur type of local farmer or trader is carefully chosen to be an e-Choupal manager (called sanchalak). The e-Choupal is connected to the websites which ITC cautiously creates in local languages for the farmers targeted. A website for each of the crops, such as soya, wheat, pulses, maize, coffee and aquaculture (shrimp) is setup. ITC updates the information and makes sure that the content is relevant. As for the input supply information, at least three input suppliers are enlisted for each category of inputs, such as seed, chemicals, and nutrients. *Sanchalaks* help the farmers access the different agricultural crop-specific websites. For their services, they earn commissions for the transactions facilitated by them through the system to ITC or the third party affiliated to the system. Kiosk management has been a job for some of the sanchalaks.

With this, the farmers can gain market knowledge about their products as well as they can browse websites to know farming techniques, price trend, weather forecast, etc. For this, they do

not have to pay anything, and they are also free to sell their products to any place they choose. The system links the farmers to the agricultural universities, newspapers, meteorological departments, banks, and technical analysts for the information. If they wish they can sell their product online, farmers can also order agricultural inputs online with the help of the *sanchalak*. The system helps achieve virtual aggregation of product supplies from the farmers, reducing costs of procurement to ITC. On the other hand, the farmers can also gain by aggregating their demands for inputs. Farmers even consult an agronomist by e-mail when they find some diseases or problems in crops. They can also seek for other services like sale and hire of tractors and harvesters, soil testing, and insurance.

The investment in hardware at each kiosk includes a computer, printer, VSAT (very small aperture terminal), solar panels, and batteries. The hardware costs about US$ 3,000. An equal amount is spent on back-up services that include web portals, training, and communication costs. ITC estimates a payback period of five years on its total investments in the e-Choupal initiative.

Benefit accrued to farmers:

e-Choupal has empowered the farmers with information and helped improve their decision-making. Farmers do not have to pay for accessing the information, and they are free to decide whether to sell their produce to ITC or other buyers, or sell through the government auction center.

Price is known in the villages before farmers incur any cost of transportation. As a result, farmers can choose the right place and time to sell, and they can avoid many overheads, such as multiple transportation, and handling.

As it has created transparency in trading and market competition, farmers get benefits from more accurate weighing, faster processing time, and prompt payment. Farmers can earn higher incomes through increased prices, higher yields, better quality, and lower transaction costs.

It is claimed that farmers selling directly to ITC through an e-Choupal realize at least 2.5 percent higher price for their crops than they would receive through the government auction system because of lower transaction costs.

Farmers also benefit through lower prices for farm inputs. On the other hand, ITC benefits from decreased transportation and commission cost.

ITC also has more direct control over the quality of what it buys. The information provided directly to the farmers has resulted in improved planning and better relationships of ITC with the communities.

ITC also earns by levying service charges to others participating companies, who find e-Choupal cost effective for distribution of their products to the villages. A number of companies market packaged consumer goods, personal care products, household appliances, and fuel through the e-Choupals.

In addition, villages have got free access to internet, which has opened up a window to the world. People also check local language news and entertainment sites.

The possibility for e-Choupals is enormous, for example, government services can go online, micro-credit organizations can offer services in the small villages, and consumer goods firms can extend their networks into villages.

Lessons : The case shows that MIS system itself can be a core capability of a private enterprise when it supports to streamline the supply and distribution chain. Contrary to the common belief that the MIS system of private company is only tuned to their business strategic needs and profitability, the agri-enterprise MIS has shown that it is equally beneficial for the farmers. The perfect match between the need of the private company and those of the farmers has created win-win situation for both parties, and has increased the total economic gains in the agriculture business by reducing the inefficiency in the supply chain. However, this success owns much to the resourcefulness of the enterprise and their strategic choice to implement the MIS in a fashion contributing to the both parties and to the overall economy.

As the ITC's business model powered by e-Choupals increased market transparency and empowered the people with knowledge and information, the case shows that the farmers started to improve their agricultural practices and marketing decision making, and ultimately increased their incomes. On the other hand, it threatened the more traditional types of trading occupations (WB 2004). Traders could not compete with the system or their incomes from the agriculture trade declined. However, as the traders were more entrepreneurs, in some places they took the new role of Sanchalaks. As the changed business environment is creating difficulty for them to unreasonably gain, they are changing.

References:

Acharya, S.S. (2004), "*Agricultural Marketing in India, Volume 17, Millennium Study of Indian Farmers"*, Government of India, Academic Foundation, New Delhi.

Binayee Surya N.*(2005): "Marketing Information System: An overview of agriculture marketing system in South Asia",* A Study Report (Downloaded from web)

Government of India (2007), *"Working Group on Marketing Infrastructure and Policy Required for Internal and External Trade for 11th Five Year Plan (2007-12)"*, Planning Commission of India.

Government of India (2005) *Situation Assessment Survey of Farmers - Access to Modern Technology for Farming*, NSS report 499 National Sample Survey Organization, Ministry of Statistics and Program Implementation.

Government of India (2008), *Annual Report*, Department of Agriculture and Cooperation, Ministry of Agriculture, Govt. of India

Government of India (2009), AGMARKNET, Ministry of Agriculture, Govt. of India

Government of India (2002a), "Report of Inter-Ministerial Task Force on Agricultural Marketing Reforms", Ministry of Agriculture,

Directorate of Marketing and Inspection (2003), *"Agricultural Marketing Vol. XLV, No. 4, Special Number on Agricultural Marketing Information System"*, Ministry of Agriculture, Govt. of India

World Bank (2004), *"India's e-Choupals: A Private-Sector Approach to Link Farmers to Markets"(http://www*.worldbank.org/wbi/reducingpoverty/docs/newpdfs/case-summ-India-EChoupals-FarmersMarket.pdf)