LINKING FARMERS TO ELECTRONIC MARKETS (E-NAM): CURRENT SCENARIO AND A WAY FORWARD

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Abstract

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NATIONAL CONFERENCE ON E-NAM : CHALLENGES & OPPORTUNITIES

Agricultural Marketing in India has evolved from being restricted to catering to local demand by having market yards within the range of farms to one which now aims to have interconnectivity between markets of other States to have a value dispersion between farms and consumers. Emerging changes in agriculture marketing environment of the country i.e. electronic market, model act, warehousing, pledge loan, contract farming etc. are ushering in opportunities for new formats of markets which are effective in responding to demand and supply. These changes will require investment in infrastructure, infusion of technology and building awareness and capacity building.

Electronic National Agriculture Market (E-NAM) is envisioned as a unified national electronic market bringing interconnectivity to markers across the country. The diffusion of E-NAM is through Organizations and intended through change in policy. The diffusion will be faster if the desired policy changes are made in the organization followed by change management in organizations. Three organizational characteristics will affect the rate of diffusion of technology in markets –desire for change (motivation and ability), innovation-system fit (compatibility) and assessment of implications (observability). E-NAM for agriculture marketing can be regarded as technology which will bring a social change in markets. The social change in relationships and networks that work between buyer and seller as they exist in traditional markets will change as the technology enabled E-NAM is adopted in agricultural markets. Successful adoption /diffusion will depend on easing the adoption barriers that can be categorized as technological and organizational.

The paper attempts to categorize State on the basis of level of adoption of E-NAM in APMC. The States who have taken lead in integration of markets will now require having interconnectivity, assaying and capacity building. The challenges for the other States like Odisha, Assam, Jharkhand are the system of parallel acts and dysfunctional of APMC markets. The markets are devoid of any trading activity and the first step for integration with E-NAM for these states is to make APMC functional for trading. The paper offers suggestions for better integration

The paper also draws example from China which has adopted technology in its national vegetable market and forages with E-market places, example of Africa common market is also an example.

Efficient markets require good governance and policy – infrastructure, institutions and services that provide market information, establish grades and standards, manage risk and create better opportunity to enhance income and upgrade the existing markets and marketing system to integrate with National Markets. Linking sellers and buyers to markets is a key factor that will bring better participation in the evolving markets and ensure better returns to both sellers and buyers. Owing to the fact that the sellers are smallholders producers and have constraints in access to markets the task of integrating smallholders producers to E-NAM is going to be a daunting one. Paper offers pathways to have national integration of markets.

E National Agriculture Market- Technology Innovation

Well-functioning agriculture marketing leads to price discovery, efficiency in supply chain and opportunity to scale up in the value chain. By linking markets, these marketing systems transmit right signals to farmers on new market opportunities and guide their production to meet preferences for quantity, quality and varieties[1].

Electronic National Agriculture Market (E-NAM) is envisioned as a unified national electronic market bringing interconnectivity to markers across the country. E-NAM is a technology innovation[2] in agricultural marketing. The diffusion and adoption of technology is a cyclic process. E-NAM needs to be diffused and adopted by States across the country. Diffusion takes place over time with innovations go through a slow. Gradual growth period followed by dramatic and rapid growth followed by a gradual stabilization. (Roger 1995)[3] . The diffusion of E-NAM is through Organizations and intended through change in policy. The diffusion will be faster if the desired policy changes are made in the organization followed by change management in organizations. Three organizational characteristics will affect the rate of diffusion of technology in markets -desire for change (motivation and ability), innovation-system fit (compatibility), and assessment of implications (observability). E-NAM for agriculture marketing can be regarded as technology which will bring a social change in markets. The social change in relationships and networks that work between buyer and seller as they exist in traditional markets will change as the technology enabled E-NAM is adopted in agricultural markets.

BOX-1 Critical success factors for E market Places

According to the study of Julta D., functional factors critical to success include facilitation of product customization, support for negotiation (bidding/negotiating), and access to a similar interest user community. The core function of an e-marketplace can be described as 3C's-commerce, content, collaboration (Brunn, Jensen & Skovgaard). E-marketplaces operators should use the 3 C's Mix in a specific way because each E-market and industry is unique. Furthermore, functions differentiated from its competitors are needed to add value to customers. According to the research of Raisch, some key areas of value-add functions are domain expertise; life cycle support; logistics support; electronic payment and escrow services; community building; integration capabilities.

Adoption barriers: Two main categories of adoption barriers are often mentioned- 1) Technology 2) Organization & collaboration (Farhhmood, Tuunainenm &Yee 2000)

Technological barriers include, for instance, network security, system integration, and the integration of internal systems to Electronic Data Interchange.

The organizational barriers include, for example, perceived ease of use, perceived benefits, lack of training, and resistance to change, management commitment, and intention to use in order to predict the possibility of IT rejection (Hasjo, 2003)

The nature of adoption of innovation will create opportunities for those who cater to individuals' need for learning and training. To make the transition from high-touch to high-tech, successful businesses in e-commerce must have strong sales, customer service and marketing orientation.

The agribusiness should pay more attention to Inter-firm collaboration barriers include, for example, economic incentives, strategic alignment, inter-firm conflicts, and social issues such as trust (Yoo, Choudhary, Mukhopadhyay 2001).

Source: B2B E-Marketplace Adoption in Agriculture

1. Draft report on Doubling farmers income- Post production maximization, DAC, 2017

2. Technological diffusion is the process by which innovations (be they new products, new processes or new management methods) spread within and across economies.

3. Rogers, Everett M. (1962). Diffusion of innovations (1st ed.). New York: Free Press of Glencoe,

Successful adoption /diffusion will depend on easing the adoption barriers that can be categorized as technological and organizational. As exhibit in Box-1 the successful diffusion of innovations like e-market places and here in case of E-NAM will depend on the use of 3C's-commerce, content, collaboration. Along with 3C's differentiate functions from the existing traditional markets (APMCs) in terms of electronic payment, community building, integration capabilities needs to be achieved for a successful adoption of E-NAM.

E-NAM: Innovators and Early Adopters

The E-NAM portal launched by the Centre in April 2016 has 45.4 lakh farmers and 451 mandies[4] registered on it. E-NAM aims for integration of marketing process and flow of goods is to be achieved by bringing interconnectivity of markets through information technology. Karnataka State has been the forerunner in market reforms and devising innovative practices to improve agriculture market and competitiveness (Chand 2016). The unified online agricultural market initiatives were launched in Karnataka in 2014. The success of UMP in Karnataka has acted as an innovator for the next stage of technology innovation in public domain i.e. E-NAM. The early adopter of E-NAM is Himachal Pradesh, Telangana, Haryana, Uttar Pradesh, Andhra Pradesh, Madhya Pradesh and Gujarat.

Efficient markets require good infrastructure, good governance and innovation-oriented institutions which aims to provide market information, establish grades and standards, manage risk and create better opportunity to enhance income and upgrade the existing markets and marketing system to integrate with National Markets.

Agriculture marketing is administered by the States as per their agri-marketing regulations, under which, the State is divided into several market areas, each of which is administered by a separate Agricultural Produce Marketing Committee (APMC) which imposes its own marketing regulation (including fees). This fragmentation of markets, even within the State, hinders the free flow of agri commodities from one market area to another and multiple handling of agri-produce and multiple levels of mandi charges ends up escalating the prices for the consumers without commensurate benefit to the farmer. E-NAM addresses these challenges by creating a unified market through online trading platform, both, at State and National level[5].

The vision and determination of Government of India and State level authorities (mostly State Agricultural Marketing Boards) in strengthening the agricultural marketing environment through the integration of markets through an electronic platform (E-NAM) can be one of the most appropriate moves and need of the hour.

Agriculture being state subject disparities in agriculture production, regulations and agriculture marketing environment, growth rate etc. are discernible amongst the States of the country which needs to be streamlined to have a pan India Connectivity of markets.

This paper examines the issues and challenges faced by States in implementing the E-NAM. The paper also explores the possible solutions and way forward.

4. www.enam.gov.in
5. www.enam.gov.in

STATE SCENARIO

E-NAM requires regulatory architecture to be in place to pan out the project and orchestration of implementing agencies needs to be attained. States would be required to meet the pre-requisites in terms of carrying out necessary agri-marketing reforms in respect of (i) a single license to be valid across the State, (ii) single point levy of market fee and (iii) provision for electronic auction as a means for price discovery. The status of the reforms required for E-NAM of states till 2016 is given in Annexure

The adoption of E-NAM has been varied across the States. on the basis existing regulatory architecture and adoption of E-NAM, States can be classified into three categories:

1) States with functional APMC Act

2) States where there are parallel markets under APMC act and

3) States without APMC Act.

The first category comprises of the states where APMC plays a prominent role in wholesaling of agricultural produce while panchayat/municipal markets are solely for retailing. In the states falling into this category, business/ arrival of produce at APMC is not being hampered by the existence of Panchayat markets.

The second category comprises of the states where APMCs, as well as Panchayat markets, exist and operate as parallel markets.

The third category comprises of states where either there is no APMC Act or it has been repealed. In such states, wholesaling of agricultural produce is not governed by any law.

Issues in States with functional APMCs & Rural Markets (Category-1)

Some of the major states where APMC and Panchayat/Municipal markets co-exist without hampering the business of each other are Andhra Pradesh, Gujarat, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Punjab, Rajasthan, Telangana, Uttar Pradesh, Uttrakhand, etc. In these states, there is a clear demarcation in activities of APMCs and rural markets. Rural markets are engaged in consumer-oriented retailing activities while APMCs are a platform for wholesaling activities.

Progressive and dormant (Lagging) states[6]

Among the states under this category, progressive states are Himachal Pradesh, Telangana, Haryana, Uttar Pradesh, Andhra Pradesh, Madhya Pradesh and Gujarat. In these states, more than 10 percent of total wholesale market yards of the states have been notified for integration with E-NAM.

In case of Uttrakhand, only 5 out of 66 wholesale market yards have been proposed for integration. Similarly, in case of Rajasthan, the percentage of yards proposed to be integrated with E-NAM is limited to 7 percent, followed by Maharashtra (5%). (Refer Table I)

6. The assumption behind classifying a state under progressive or lagging is solely based on percentage of yards of the state proposed for integration with E-NAM. Actual integration/implementation has not been considered.

Table I- Integration of markets

State	Number of APMC Proposed to be Integrated	Total Number of wholesale yards	Percentage of proposed integration
Himachal Pradesh	19	56	34%
Telangana	44	180	24%
Haryana	54	281	19%
Uttar Pradesh	100	623	16%
Andhra Pradesh	22	188	12%
Madhya Pradesh	58	545	11%
Gujarat	40	400	10%
Jharkhand	19	190	10%
Uttrakhand	5	66	8%
Chhattisgarh	14	187	7%
Rajasthan	25	454	6%
Maharashtra	45	902	5%
Odisha	10	436	2%

Major constraints on implementation of E-NAM

1. Harmonisation of Grades and Standards

The success of e-NAM in improving competitiveness and integrating Pan India market will require assaying facilities in various markets to ascertain quality traits. (Chand 2016) Trading on the virtual platform will require a strong and well-established standardizing and grading system. Harmonisation of quality standards of agricultural produce and provision for assaying (quality testing) infrastructure in every market to enable informed bidding by buyers will be required. Besides this disseminating and communicating the same with market participants need to be in place for harmonization of quality standards across the state, which in turn will result in increased number of participants.

2. Integrating value chains

Technology can contribute to creating the system by synchronising value chain activities into layer-wise process(Dey 2015). E-NAM is perceived as a marketing system that will facilitate the post-production supply chain of farm produce. It is required to work for the inclusion of farming communities and farm operations into other segments of the marketing chain like storage, logistics so that it will help capture a larger share of the final value realised. A wide correlation between value chains of the producer, market channels, retailer and consumer is required to be developed. Integration of value chain system, also includes secondary activities such as research, development, front-line demo, extension work, market information. (DAC 2017)[7]. Cross learning from dairy and food processing industry where value chain integration have helped in optimal value realization needs to be adopted by the progressive state where E-NAM is already operational.

7. Draft report Doubling Farmers' Income – Volume III Post-production Agri-logistics: maximising gains for farmers

3. Capacity building of market participants:

With the advent of E-Marketing in various states there emerges a requirement for capacity building of different stakeholders and Institutions of agri value chain. E-NAM is a paradigm shift which will see new roles of Market Functionaries, traders, farmers etc

Participation of different market functionaries and farmers and service orientation of market officers is imperative for the successful rollout of E-NAM. The initiative in Karnataka observed some unwillingness initial on from traders. These issues will require being handled through regular training of farmers and other stakeholders. The farmers rich in terms of human capital are more likely to participate in new emerging supply chains (World Bank, 2006). This suggests the importance of capacity building of farmers, traders, groups, co-operative, policy makers etc.

NIAM has outlined a capacity building plan for various actors namely farmers, traders, APMC secretaries, Directors. At apex level, Director needs to understand the implementation of E-NAM and making required policy changes, providing provision for PPP model for E-marketing and creating synergy for customized services. APMC Secretaries and Chairman need to build their capacity in operation and management of electronic market, change management, dispute redressal, consumer behaviour, advisory and market information to farmers etc. E-NAM requires farmer linkages for selling produce. The Farmer Producer Organization (FPO) needs to be strengthened on Organizational skills, working in teams, interpersonal communication, work allocations, online payments and transaction, pledge finance etc. Training will help farmers better manage their finances, achieve more sustainable production, improve their market performance, and stay innovative and competitive. Besides this, they need to understand changes in markets and preparing produce by grading and assaying for E-NAM. Traders and market agents need to be trained on adoption of grades, assaying, bidding, online payments, sale procedure, produce handling, dispute settlement etc.

Table II- Capacity Building needs of different stakeholders of E-NAM

Stakeholders	Components Covered
Farmer	Understanding E-NAM, aggregations, market trends & other opportunities
Traders/ Other Agents	Grade adoptions, dispute, payment facilitation, produce handling, etc
Mandi Secretaries	Operation and management of market, change management and dispute redressal
Principal Secretaries/ Director (Agri Marketing)	Importance of E-NAM, facilitation through reforms, PPP, etc
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4. The synergy of network organisation and market services

The success of E-NAM will depend on the delivery of services in an optimal way. There is a need for a synergy of network organisation and market agencies like warehousing and collateral management agencies, financial institutions, logistic providers training and extension organizations As markets are transforming towards on digital phase, diverse and discursive groups of clientele, public and private organisation need to be integrated to provide customized services. These services include assaying and grading of the produce, price poling and information dissemination, warehousing and disposal and commodity-based structured financing (Dey 2016).

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Issues in States due to dominance of Rural Markets (Category-2)

There are states in India where Panchayat markets are in conflict with the APMCs in terms of handling business even with poor infrastructure. In the states of Odisha, Assam, Jharkhand etc. the wholesale, as well as the retail trade of agricultural produce, are carried out in Panchayat markets.

The States where parallel acts and markets are in coexistence is finding difficult to integrate markets with E-NAM. Most of the APMC markets of Odisha are devoid of any trading function. The markets which have dysfunctional and inaccessible for long are now required to set up online portal and testing labs to get started for E-NAM.

Progressive states[8] : Odisha, and Assam

In Odisha, ten markets have been identified for integration with E-NAM

Assam: Though Assam is not in the state where markets are proposed for integration with E-NAM during the first phase, the state has been considered among the progressive state for Panchayat Markets. In the state of Assam wholesaling of agricultural produce is done mainly at Panchayat Markets. Assam has delisted fruits and vegetables from its APMC Act. The much-required move has paved a way for freedom for farmers to sell their produce directly to processors, aggregators and traders outside the Mandi. However, in absence of alternative establishments, regulation or deregulation of fruits and vegetable had so far, no impact on the state as transactions are taking place at the mercy of traders. All the farmers are resorting to middlemen or traders mostly at Panchayat market. As compared to other states in NER, the APMCs of Assam have some basic infrastructure which can be upgraded easily for integrating markets with E-NAM.

Dormant/lagging states (where neither panchayat markets nor APMC is performing well): The NER States, Jharkhand and Chhattisgarh

In case of other states in NER (except Assam), both APMC/RMC yards and Panchayat markets are functioning. However, Panchayat markets (without infrastructure) dominate here in trading of agricultural/horticultural produce. Chhattisgarh is also among the states where both Panchayat markets absorb most of the wholesale trade of agricultural produce. In case of Jharkhand, APMC Principal Yards have the least involvement in primary marketing. The rural Markets have remained outside the process of development. Most of these markets lack the basic minimum facilities. The absence of infrastructure and any system/ procedure are the major bottlenecks in the process of development of markets.

A deeper insight into the status of marketing and challenges in integration of buyers and seller to E-NAM was gained during a market survey in Assam, Odisha and Jharkhand. The problems that need to be addressed to overcome the paradoxical situation are presented here.

The common practice of farmers selling the produce to village aggregators delinks the buyers and sellers from the market. The uncompetitive markets have lack of market channels and support services. The interaction with farmers reveals that the intermediaries are the first point of contact and they depend on them for availing services right from sourcing inputs to credit to market information. The complacency that has set in due to dysfunctional of markets will be difficult to surmount as the integration of dysfunctional markets with E-NAM is not going to be easy.

8. Progressive are the states where Panchayat markets are doing very well, irrespective of APMC markets. Dormant are the states where neither Panchayat markets nor APMC markets are performing adequately.

The traders are willing to relocate the business from local markets to RMC yards provided there is a reliable business environment and adequate marketable surplus to trade. The readiness of buyers and sellers to adopt and integrate with E-NAM is a positive signal and needs to strategies to bring the competitiveness and vibrancy in marketing environment of Odisha.

A primary survey and interaction with buyers and sellers in the markets of Odisha and Assam revealed following pointers:

1. The geographical proximity of RMC are away from producing areas which constraints the access to these markets

Marginal and smallholder farmers prefer a market in close proximity to sell their produce. The overall mean distance to be covered to access these markets is 16km. There is little incentive for farmers to cover this distance to sell the lot which is small. Village periodic markets owned by local bodies are available at a distance of 3-4 kilometres and are preferred over RMC. Village periodic markets are unregulated, have poor infrastructure, have overrated market charges yet these markets are visited by farmers as they are the only option available to farmers. To serve farmers in an effective way, it is necessary for RMCs to provide market yards at locations which are accessible to farmers with minimum cost and effort. The proximity of RMCs with farmers' field is an important criterion to assess the effectiveness/ potential of RMCs in serving the farmers' need

2. Low frequency of Visit APMC

As observed in Assam and Odisha the frequency of farmers visit APMC market is 1-2 times in a month only. The visit to market by the farmer is low as most of the produce is sold to village aggregators and its uneconomical to transport a small lot of produce to the market which is at a distance. Most of the farmers (47.4%) sell their produce to traders outside of RMC yards. The next large category is comprised of farmers who sell their produce to village level aggregators (25.1%). Only 18.3 percent farmers sell their produce to traders/ wholesalers sitting inside the RMC yards. (Annexure 1 Table A)

3. Non-participation of buyer at RMC markets

The markets under RMC in Odisha are devoid of any transaction as there are no market channels in function. Like sellers, the traders also face uncertainty in trading in RMC markets as there is a risk of inconsistent supply low marketable lot and poor quality of the produce. Buyers have no motivation to trade in the market as farmer producers do not visit these markets to sell the produce. However, buyers are willing to engage in markets provided sellers have sufficient produce to trade.

The three major reasons that emerged from farmer survey behind not utilising RMC platform are the location of RMC (endorsed by 29% farmers), the absence of traders at RMC (endorsed by 20% farmers) and transportation problems (endorsed by19% farmers). The other reasons which were cited by the farmers were small surplus with farmers (endorsed by 9% farmers) and uncertainty about getting a deal and price (endorsed by 9% farmers).

4. Absence of systematic market information has inhibited understanding demand and supply for taking informed marketing decisions

A recurrent factor that bears heavily on the dysfunctional market is the lack of market information and analysis. In the absence of market information system, farmers fail to 0understand demand signals and market trends. Market information emanates market signals which farmers to take informed decision to sell or to store the produce. In RMC where no trading takes place in the market, market information on arrival and price does not get formalized in markets. In markets where trading is there, the Market

committees provide information through notice board of RMC at main market yard only and few RMCs are uploading price information that can be accessed through Agmarknet website.

5. Farmers expectations from APMC

In order to create a conducive marketing environment, the role of the regulated market goes far beyond the establishment of norms and creates regulations. The regulated market committees are expected to provide a number of services to farmers. RMCs are expected to emerge as a service-centric organisation than mere a controlling/ regulation body. A few basic facilities which are expected by farmers to be provided by RMCs are exhibited in Annexure 1, Table B.

Farmers have requirement of an independent auction, adequate numbers of buyers at RMCs for competitive bidding mechanism, better valuation of produce (through auction), immediate price settlement, warehousing facility etc. Maximum percentage of farmers (83%) has stated that the dissemination of price information through multimedia arrangement has to be given high priority.

Issues in States without market regulation (Category-3)

Bihar, Kerala, Daman and Diu, Lakshwadeep, Andaman and Nicobar Islands, Manipur and Dadra and Nagar Haveli have no APMC Acts. In case of Bihar, there is no facility for marketing of agricultural produce.

In absence of regulated markets, individuals have set up roadside markets in Bihar. Farmers seem happy the markets have become available closer to their growing areas; they can directly access these markets even for selling small lots on a daily basis unlike earlier when some farmers could not afford to take their produce to faraway APMC markets both in terms of time as well as the cost of transport. Thus, these private unregulated wholesale markets have provided easy access to small farmers who want to sell directly. These markets are set up by individuals who charge both farmers (2 percent) and buyers (per lot size) a fee. There is hardly any facility other than the roadside space made available for the transaction of produce. (Singh 2011) .

In Kerala, the agriculture marketing is taken care by Cooperative societies and the marketing practices are regulated by societies.

Need to be reformed and made to deliver by giving license to private markets, e-payment of market fee, giving representation to farmer producer companies introducing quality and open auction-based price discovery, investment in market infrastructure like warehouses, cold storage, pack house to bring efficiency in supply chain.

Pathways to integrate Farmers to market

Linking sellers and buyers to markets is a key factor that will bring better participation in the evolving markets and ensure better returns to both sellers and buyers. Owing to the fact that the sellers are smallholder producers and have constraints in access to markets the task of integrating smallholder producers to E-NAM is going to be a daunting one.

1. Linkages with Market

Understanding the inter-linkages in resources, production, risk, price and market and how they affect the capability smallholders to participate in new opportunities is critical to draw a path for integration of regulated markets with E-NAM.

Incentives and constraints to market integration are realized differently by farmer producers and change as a result of market development. As the increasing opportunities are becoming available to farmers as alternative markets such as E-NAM, the process of integration of buyers and sellers need to have a pathway

The leap in transforming the abandoned regulated markets of Odisha to Electronic National market is not only going to be a feat of technology but also a socio-cultural exercise. For bringing this transformation it needs to be recognized that not all farmers and buyers will respond to this transformation. The ability and willingness to participate in the emerging markets driven by information technology will depend on:

- Well-functioning markets to give them appropriate incentives
- Farmers have access to finance and information
- Efficient infrastructure to store and transport the produce at a reasonable rate

If one component is missing the farmer producers will not be willing to participate to the same extent. Therefore, concentrating on these components to bring a holistic approach to market development is imperative to have better market integration

2. Enabling market connectivity through market information

Market information encompasses reliable price, buyer contact, market channel, grades and standard specification, post-harvest handling advice and storage and transport recommendation.

To achieve this pathway using the Information technology not only to disseminate price but also to reduce transaction cost need to be in place. Investing in the communication infrastructure such mobile phones network, internet linked rural kiosk which aid in strengthening market information, extension and other services to farmers needs to be made.

3. Producer organization to offer vital link to market

Technical and institutional innovations that reduce transaction cost have proven to be enablers especially the wider use of information technologies- mobile phone, the internet, social networks for vertical coordination arrangements with farmers or producer organization. Producer organization including agricultural co-operatives plays an important role in supporting farmers to trade in the marketplace and understand the trends in marketing.

FPO and collective action can help to enhance farmers' competitiveness and increase their advantage in emerging marketing system of E-NAM. Collaboration between FPO and Private sector built on their shared interest in achieving scale and market power will be critical in integrating Farmers to market[10].

4. Market-Led Extension and capacity building

Market-led extension to transmit signals to farmers on new market opportunities will make physical markets relevant to buyers and sellers.

Extension functionaries have a key role to play in engaging farmers with markets. SWOT analysis of the market, organizing commodity based farmers' interest groups and farm management capacity building, backward and forward linkage, Farmer's exposure to market intelligence and guidance for a quality decision about the market. Empowering farmers by linking them to E-NAM information, services and linkages through Market Led Extension is a long-term solution.

5. Linking rural periodic markets by upgrading them as PRAM

As per the recommendations of Report on Doubling farmers income , the Rural periodic markers need to be upgraded into a function that enables aggregation and transportation from village level to wholesale market. It has been advised to build on the available infrastructure and experience of the RPMs to establish a large number of primary rural agricultural markets (PRAM) to provide the following two services:

I. Direct marketing between producers and consumers
II. Aggregation platforms for the small lots of farmers

In pursuing the establishment of PRAM, the capability to connect produce in suitable quantities with a market of choice will be developed. Further with farmers enabled with a choice of markets, the element of the market to market competition will follow. This approach is what will make the markets function and provide services that add value and better returns

6. Adopting Model Agriculture Produce Livestock Market Act (2017)

As per new Model Agricultural Produce and livestock marketing Act 2017, the new definition of market area is now extended to the whole State/UT as one unified market area for regulation of marketing of all or any of the kinds of agricultural produce. This will go in a long way in removing the entry barriers to markets and at the same time arrest the problem of fragmentation of markets within the State.

7. Warehouses and silos to be declared as market points

The new legislation also provides for declaring warehouses/silos/cold storages or another place as market sub yards. This will provide better market access to farmers.

In order to declare a warehouse as a sub-market yard, warehouses which are fit to serve the purpose may be notified. Generally, warehouses accredited by WDRA may be selected to be notified as a sub-market yard as the accreditation norms of WDRA requires warehouses to follow scientific storage practices which ultimately results in the quality keeping of the produce. The concept has been shaping up in Karnataka through initiatives of Rashtriya e-Market Services Private Limited. A similar initiative has been seen in Punjab where silos have been notified as Mandis.

8. Good governance and innovations

Efficient markets require good governance and policy – infrastructure, institutions and services that provide market information, establish grades and standards, manage risk and create better opportunity to enhance income and upgrade the existing markets and marketing system to integrate with National Markets. It will require innovative pathways to achieve following

- High level of private participation in grading, warehousing and scientific movement of commodities.
- Coordination between various stakeholders for setting standards and monitoring their implementation
- It ensures transparent and hassle-free payment process for the producers.
- It improves the regulatory process and enhances service orientation.
- It mandates stipulation and regulation of standards for agriculture commodities in an effective and efficient manner that increases farmer welfare.
- It upgrades the skill level of personnel operating in the agriculture market and create economic opportunity for youth to participate in emerging formats

Towards a fully unified market

E National Agriculture Market needs to be implemented in a phased manner to achieve a fully integrated market of the nation. The various components of the market that may be achieved over a different period of time are depicted in Table III.

Table -III The components of E-NAM to be considered during different phases of development

Phases/	Phase I	Phase II	Phase III
Components	(0-2 years)	(3-6 years)	(7-12 years)
Enabling environments	Legal (single license, unified license, e-trade and others)	Complete reforms	Facilitating role
Infrastructure	Hardware and software	Up-gradation of Mandies	Creation of physical delivery centres and collection centre
Grades	Selected commodities	Comprehensive coverage	All commodities
Functions	e-price discovery	Bank settlement, NWR and logistics	MIS, promotion, demand creation
Farmers participations	Individual/groups	Farmers groups/FPO	Producers company
Skill development	Mass awareness (extensive)	Specialized	As per global requirements
Institutions	Establishing national level agencies Identification of SpecialPurpose Vehicle	Institute for functions like training, research, defining grades and international trade	
Promotion	NAM Portal	Product	Branding
Finance and insurance	Direct payment	Payment and credit	Complete risk coverage
Input and extension	Information dissemination	Advisory	Delivery of physical and technical inputs
Focus	Regional	National	Global
Agri Ecosystem	Post Harvest Management	Sanitary and phytosanitary	Zero carbon footprint

Source www.ccsniam.gov.in

Some International examples

China launched a national e-commerce platform in 2015 to serve rural areas through supply and sales of agricultural products. Set up by All China Federation of Supply and Marketing Cooperatives, www.gxyj.com, aims to match supply and demand of daily consumer products, agricultural production materials and produce via online to offline cooperation. Users can trade online and use services ranging from online payment to logistics and quality certification[11].

Shandong Shouguang Vegetable Trading Market Online (SSVTMO) is nation's largest vegetable wholesale market in China. It is vertical e-marketplaces provide online access to vegetable. It is the national modernization market demonstration item supported by the National Development and the Reform Committee. The Market is jointly organized by Chinese Vegetable Circulation Association, Beijing Gold Net & Tech Information System Co., Ltd. and Shouguang Chenlong Investment Consulting Co., Ltd. The market organizes vegetable trading market online leading by senior experts of Chinese bulk commodity Electronic Commerce field, supported by the special administration team and using the network information technology[12].

East African Community Common Market (EACCM) and Common Market for Eastern and Southern Africa (COMESA)are examples from Africa. The EACCM has five members and COSEMA has 19 member countries from eastern and southern Africa. A single market provides a competitive environment and makes the existence of monopolies/cartel difficult. Consumers are benefited by getting the best quality product at a cheaper price and increased the choice of products. In addition, the common regulatory regime and frameworks ensure that best practice within the regional framework is not only in place but adhered to. The closeness to a "single" market ensures that good procedures are instituted and practised and thus creates a kind of seamless market mainly in those regions that are behind in their instituting good policies. The technology enabled markets can also be found in Ethiopia and Turkey. Similar, benefits are expected from the National Agriculture market in India.

Conclusion: Responsive, inclusive and technology-enabled markets are need of the hour as it will have a positive effect on livelihood, welfare, food security particularly for poor households and every step should be taken to achieve the adoption of E-NAM.

11. http://europe.chinadaily.com.cn/business/2015-11/06/content_22383960.htm

12. Xiaoping, Chunxia, Dong& Xiaoshuan -B2B E-Marketplace Adoption in Agriculture, JOURNAL OF SOFTWARE, VOL. 4, NO. 3, MAY 2009

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