

## National Conference on Agriculture – 2022 *Ministry of Agriculture & Farmers' Welfare, New Delhi*

### **Marketing, Agri-logistics and Agri-value System**

#### **Background Note**

##### **Group-3 Coordinators**

- **Sh. Pasha Patel**, Chairman, State Commission for Agriculture & Prices (Maharashtra)
- **Dr. Sukhpal Singh**, DG Centre for Research in Rural & Industrial Development (CRRID)

##### Focus Areas:

- **Market structure and marketing efficiency**
- **Demand and price forecasting and alert system**
- **Price volatility and market stabilisation**

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India's agriculture has travelled a long way from a period of subsistence farming to that of surplus output, calling for a paradigm shift in the earlier stance taken with the agricultural marketing system. It emerges that agriculture markets, established in 1960 to oversee and manage a situation of deficit production, are now inefficient in handling the large marketable surplus efficiently. For example, India now harvests 40 times as much tomato, 14 times more potato, 8 times more wheat, thrice as much in poultry and meat, 13 times more fish, 8 times more milk and almost 40 times more eggs, compared with that in 1960s.

The agriculture marketing system is expected to help the agricultural sector to adjust to this changed scenario, an environment where marketing of large surpluses is required. The rethink is with the reasoning, to move marketing away from overseeing the flow of produce (from farm-to-consumer), towards a function that underlines the flow of market linked information (from fork-to-farm), to guide and mentor the market and logistics networks to efficiently handle surpluses that are generated. Agricultural marketing entities have earlier focused on informing market price (transaction status) and not much on providing market intelligence (forecasted demand & price).

Marketing system requires to provide both intelligence and information, to allow producers to adjust to the changes taking place in the external market environment. Therefore, as a function, it is intended to direct the flow of goods to crystallise demand, for productive effectiveness & efficiency of agriculture as a business. The marketing system also needs to promote alternate concepts, e.g. provisioning of alternative market

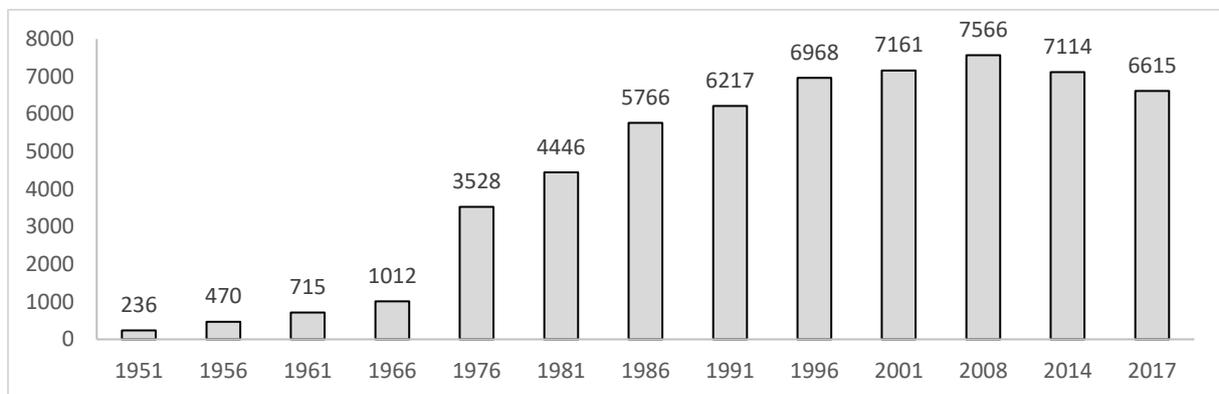
channels, participation of private sector, using e-platforms for market expansion and enabling a stable and farmer friendly market environment. Without effective marketing, all efforts and resources and the production is left undervalued and the outcome does not lead to the desired growth.

The Agricultural Marketing System incorporates government policies and strategies, for enabling efficiencies in the supply chain activities for agricultural produce. Marketing is a vital role as a link mechanism, between producers with consumers. Farming needs to be approached as a market-led business enterprise there is the need to develop a marketing system that is more appropriate to the need of the hour. The marketing system, needs next level reforms to give impetus to modernise the markets, expand upon the market network and to promote more market linked activities at village level.

### The Market Architecture

The marketing of farmers' produce has traditionally been channeled through a network of agricultural markets, predominated by APMC regulated markets. The current market system comprises about 2,284 APMCs which operate 2339 principal markets. These principal markets have extended their footprint through sub-market yards, which total 4,276. The sub-market yards are expected to operate as a part of the principal market yard under the associated APMC.

**Figure 1 Regulated Market yards in India since independence**



Data includes APMC markets plus their sub-market yards

Source: DMI

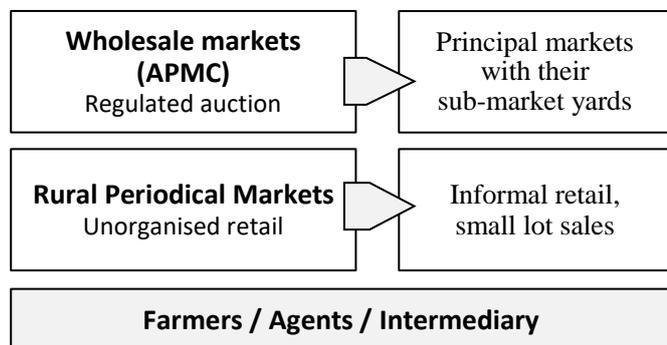
In essence, there are only 2339 principal markets which operate out of 6,615 locations (principal market yards plus their sub-market yards). These 2339 principal markets are further categorised as primary, secondary or terminal markets, depending on their location and the volume being handled.

With a few states having deregulated their markets, the total number of regulated yards has reduced of late. Market yards have been mostly developed by the government and

the majority of the markets have godowns or warehouses, though very few have cold stores. The markets were originally conceived as nearby trading platforms, for cotton originally, and then for other hardy crop types. Scientific assaying, packaging and pre-conditioning of produce, is not readily possible at these centres. The situation is more acute in case of perishable produce, other than foodgrains, which are also traded at these markets. Milk is one of the produce types not handled at such markets.

Each principal market, has a designated area under its coverage. Regulations required, that perforce, the notified produce of the region be transacted only in these regulated yards. Therefore, a farmer is, by regulations, unable to freely transact an exchange with a buyer from outside the APMC control area. This has tended to enforce a monopolistic mechanism for agricultural produce trade. Furthermore, the farmers have no facilitating system to bypass the local market and connect with larger or better paying market as they have no organised facility or assembly centre that can aggregate and transport their produce to transact at other market centres.

Even direct connection with APMC markets, which are principally wholesale markets, is difficult for many farmers. The small & marginal farmers, with uneconomical sized marketable lots, find it difficult to aggregate their produce and move to these APMCs to participate in the auction system for suitable price discovery. They therefore use local agents and traders, who relieve the small farmer of their produce at locally determined prices, to function as aggregators and transport to transact at the APMCs. This intermediation has naturally been depriving the farmer-producers from aiming for optimal or market-linked price realisation. The current market architecture does not provide farmers with a choice of markets but imposes constraints to their selling options.



**Figure 2:** Existing market structure – which enforces an intermediary exchange at every stage

The market system was designed at a time when production levels and marketable surplus in the hands of farmers was comparatively less, and with the purpose to facilitate platforms where farmers and buyers could conveniently transact a trade in a transparent competitive manner. The quantum of produce was also suited to the demand in the vicinity of such markets. However, with the general growth in production levels over the years since, the markets now receive agricultural produce, far in surplus of the markets own capacity to absorb the output, which results in sub-optimal price discovery at the current markets.

Therefore, the markets no longer are platforms that provide optimal monetisation of the farmers' produce, but promote an intermediary trade, which through a series of players, connects the produce with other demand centres. There is the need to restructure the role of markets, currently limited as exchange centres, and expand it to include services that connect the farmers with other market points. Markets need to be structured so as to integrate the flow of produce from villages with domestic and global level markets.

### Rural Periodic Markets

The country also has a large number of rural periodical markets (RPMs) located at village level. These are small *haats* / *shandies* that operate at intervals of a week or two, and attract sellers and consumers from the hinterland. An assortment of daily needs including farm produce (grains, fruits & vegetables are traded) at these places. These RPMs, numbering about 22,932 (as on 31.03.2017) are owned & managed by different agencies, namely, individuals, panchayats, municipalities, including State Agricultural Marketing Boards (SAMBs) / Agricultural Produce Market Committee (APMCs).

In parallel, many states adopted farmer-consumer markets with varied success. These go by the names of *Rythu Bazaar* (A.P. and Telangana), *Raitar Santhe* (Karnataka), *Apni Mandi* (Haryana & Punjab), *Shetkari Bazaar* (Maharashtra), *Uzhavar Saathaigal* (Tamil Nadu) and *Krishak Bazaar* (Odisha). About 488 such market platforms are reported, and provide mostly for transactions of produce like fruits, vegetables and flowers which are perishable in nature. The quantum of produce sold in these markets is limited to the consumer footfall or local demand.

These RPMs function under traditionally existing informal procedures and provide the small farmers the opportunity to directly retail their produce to local consumers. In addition, aggregators and agents also frequent these *haats* to informally serve the marketing interests of small farmers. However, the opportunity to connect with larger markets that offer better value is not available to the small farmers. These RPMs, therefore serve as a stop gap measure, for farmers to tap into local retail buyers for quick monetisation of their produce.

The key bottleneck is a lack of facilities for the small farmers to consolidate their produce into viable quantities and link with other markets. This absence of facilities to pool and move the produce, also tends to deter the farmers from any collaborative farming, as their direct marketing opportunity is limited to the demand from local consumers. There is the need to enable aggregation and logistics hubs at village level, besides providing a retailing platform.

### Density of Markets

The availability and access to markets by all farmers in general, and small and marginal

farmers in particular, is an important factor in designing the market architecture. Frequently, the market density targets, are in relation to the recommendations made by the National Commission on Agriculture (1976). That Commission had recommended that a market be made available within range of 5 km of farms, a distance that is negotiable by walk or cart within an hour. This assessment was subsequently reiterated by the National Commission on Farmers (2004).

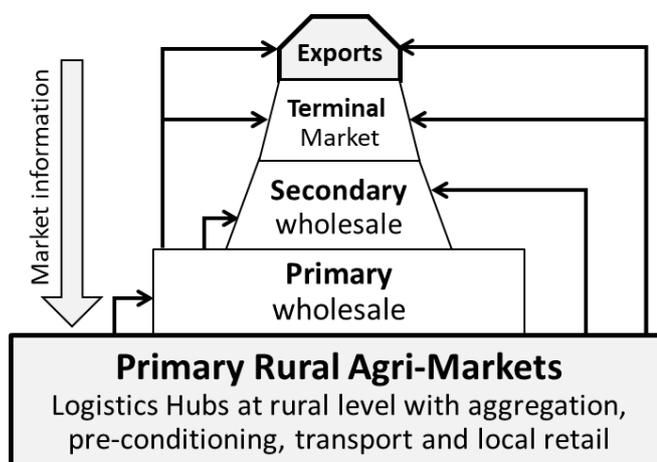
On the basis of this recommendation, the optimal market coverage is interpreted to target a catchment area of 80 sq. km (5 km radius) for each agricultural market. However, the original recommendation was made at a time when road connectivity was minimal and farmers would bring their produce on head or on camel or bullock carts. The primary guiding factor for market density is the time taken to communicate the produce to undertake a transaction and the physical distance involved is actually related to the mode of transport. The current rapid development in rural roads and availability of motorised transport, has changed the dynamics and the prior assessments on market density need to be revisited. Therefore, the market density requirements need to be revisited.

### New approach to Market Architecture

The farmers no longer cater to just the local demand as their produce is channelled to populations remote from production areas. Whereas earlier, a marketing system was considered effective if it provided for market yards and transactions within immediate range of farms, the yardstick today needs to include, the interconnectivity between markets and the value dispersion between farms and consumers.

The small and marginal farmers, as a majority, are restricted in their ability to move their surpluses into markets of choice. The existing market architecture does not promote such facilitation and rural market yards are merely points to assemble and transact, deficient in offering any systemic linkage with the unified national market. Therefore, the architecture is lacking a value linked system approach, and is limited to price mechanism that is locally derived, delinking the farmer from the wider demand.

Both, restrictive regulatory practices and absence of a market structure that can manage the widely dispersed small lots of produce in an organised way, have deprived the farmer from his/her optimal share in the consumers' rupee. Future design



**Figure 3:** Aggregation at rural level is the foundation of a market structure that establishes a directed flow of trade.

and development of market architecture may require to factor in the fact that production can be in excess of a local market's capacity to absorb the supply, the transport options available and the need to facilitate farmers' transactions at national markets which offer optimal price for the value produced.

There is opportunity to upgrade the sub-market yards numbering 4276, into full-fledged wholesale markets, as well to upgrade the rural periodic markets numbering more than 22,000 into functional aggregation cum marketing hubs. As aggregation points, these can operate as facilitating centres that provide the farmers a service to link them with trade at remote locations, providing a logistics interface. The new system should aim to inter-connect the farmers with multiple marketing opportunities, through the wholesale and retail market networks, domestic and international.

### **Effectiveness and Efficiency of Markets**

A network of markets is not a sufficient condition unless the markets operate in an efficient manner as intended. Markets are operational hubs where the consolidated movement of goods from producers to consumers is initiated. The main objective of these operations is to fulfil the physical delivery of goods as per the individual transactions. Where such operations are done at the lowest possible cost, consistent with the provision of the services desired, then a market can be termed as efficient.

In the current situation, the marketing operations cannot be called effective or efficient as there remains a high price dispersion between markets within a region, and the price dispersion between farms and terminal markets is far greater than the nominal costs of operations. In the current system, the efficiency and effectiveness of the market system is negatively impacted as the system has evolved into a logistics system that is serves a blind push into markets. The current system does not facilitate any targeted access by farmers/producers into markets of choice, and the blind push into markets promotes multiple handling of the goods, resulting in various inefficiencies.

It may be worthwhile to consider establishing functional logistics hubs at rural level, which will facilitate the aggregation and onwards supply of agricultural produce, as a service to farmers. The produce could move under ownership of the farmers, who can then undertake a transaction at prices that are determined at the remote destination market. The example of organised dairy marketing is an example of note. The price at each pooling point is not determined at the local collection centre, but is assigned by the supply and demand dynamics at the final receiving facility.

These hubs can also be points of direct marketing at rural level, therefore serving a dual purpose of exchange and facilitation, as primary rural agri-markets. There is opportunity to upgrade the infrastructure at existing periodic markets to develop them into these fully

functional primary rural agri-markets, capable of handling multiple agricultural produce.

The farmers no longer cater to just the local demand as their produce is channelled to populations remote from production areas. Whereas earlier, a marketing system was considered effective if it provided for market yards and transactions within immediate range of farms, the yardstick today needs to include, the interconnectivity between markets and the value dispersion between farms and consumers. Accordingly, there is need to modernise agricultural markets, including rural periodic markets, with the capability to service a national level pan-India market. Such deliberations would include, aggregation, assaying, pre-conditioning, packaging, storage and transportation facilities, scaled to suit each production region.

The effectiveness of an agricultural marketing system will vary depending on the situation of the target regions, consumer, product and technologies in hand. Besides, global factors can come into play for certain commodities, where forecasting and pre-empting factors outside of the local region is also expected to contribute to marketing effectiveness. An effective marketing system is not deterred by operational inefficiencies in the flow of produce, but counters those inefficiencies by the effective dissemination of market intelligence (demand) and information (price), and by easing the rules and regulations to promote more relevant and responsive supply chains.

One key feature for making markets and the marketing system efficient, is to have a system that supports a pull mode from demand centres. A backwards 'pull' from 'fork-to-farm' is needed, so as to generate a directed flow of goods from farm-to-fork, to make the markets efficient. A system of consolidated market intelligence which provides advance information is needed. The information should allow farmers a choice, to monetise their produce at optimal prices at a location and time of their preference.

### **Market Intelligence**

Markets are most effective and efficient when they operate under direction in the form of demand and supply forecasts. A revamped market structure will require to transform its operations such that they generate traffic that is guided by relevant market information.

A study of historic price signals does provide certain trend analysis, but that is not sufficient to mitigate market risks or to streamline the supply chain. There may be the need to move from giving price information to market intelligence. In the current status, market information is mainly limited to price information, where the current day's transaction price at select centres is provided. Each day's price is a signal of that day's status of the demand supply dynamics. This price signal is expected to help in decisions to select the markets to send the supply. However, since the price data is after sales (ex-post) information, it may not remain the same in following time period. In fact, the

information results in an ex-post facto (after the event) response, and any resulting supply itself effects the demand-supply dynamics at the target market, and aggravates the price fluctuations.

Instead of current price, forecasted or advance information is more relevant to guide the entire range of agricultural activities, from production to post-production. Such advance information about future demand and price provides the stakeholders' a better set of data markers to take optimal decisions. Depending on level of advance information, the decisions can also include pre-season crop selection, crop planning, besides post-harvest market selection and post production logistics.



At a basic level, market intelligence can involve providing advance information, such as forecasted price, including quantitative demand and supply forecasts. Market intelligence can include dynamic information on supply situation, availability of logistics, advance market arrivals, etc. Market intelligence is a core function of marketing and is required as a useful 'Decision Support System'. In the current marketing system, there is no such comprehensive and consolidated market intelligence as a service to farmers. Such a system will be worth considering as an ease-of-doing-agribusiness initiative by the government.

Market intelligence will also serve as a guide to assess the agricultural outlook & situation analysis for food and nutritional security of the country. This conference group is to deliberate on what and how market intelligence can be implemented. The decision support system could also consolidate other information to support marketing decisions such as near real-time crop specific status on sown area, expected yield, etc. The government of India has an elaborate system of estimation of crop sown area, yield and production of different crops, but quality and timeliness of the data poses a big challenge in precise and error free forecasting and projections. Multiple organisations are involved in compilation, monitoring and release of prices/price indices, but currently no department is involved in forecasting prices/demand officially at the national level. To support this the Directorate of Marketing & Inspection (DMI) could be restructured as to focus on Marketing & Intelligence.

Assessing, evaluating and monitoring demand and supply at global level will also be beneficial. Made in India agricultural produce and products will need to find destinations abroad, to support continued growth in production. In current situation, the intelligence about international markets is generated at captive level by some large trading houses. A macro level status, of international markets, is not available as public knowledge and this may need to be developed and refined over the long run. A matrix that indicates international supply and inventory status and market specific demand will be worth considering to support export opportunities where possible.

### **Price Volatility**

Price volatility and price dispersion are evidenced in the existing marketing system. The variation or dispersion in price between different markets, in the same time period, is far more than the difference in cost of delivery of goods. A similar dispersion is observed in price for commodities at farm-gate within the same region. Such variation can be attributed to mark-ups by multiple players in the supply chain and due to lack of transparency in the price discovery mechanism. The market regulations which do not allow for new players to enter markets, also contribute to a less competitive environment in the market system. This also adds to a situation where the price discovery at markets is not linked only to demand and supply but also subject to monopoly of market actors.

A minor variation in the supply situation, for a given demand, is seen to result in a much larger upwards volatility in the price to consumers. In this period, the cost of delivery may not have changed. These are seen as opportunity events for agricultural markets. However, the large opportunistic increase in price at retail end, does not reflect in an equal or proportionate increase in price at farm-gate. This is most commonly observed in case of perishable produce, especially those in high demand such as onions and tomato.

In case of crops such as cereals, pulses, oilseeds, etc., which can be stored for longer

durations, the situation is somewhat similar. Though these commodities remain in demand all through the year, there is a temporary glut at time of harvest. The farmers can be subject to price volatility during the harvesting season - the produce is valued, either at the notified MSP or the buyers determine a price for that period. In many cases the buyers' determined price is observed to be less than the notified MSP rate.

The warehousing network is important, intended to build a buffer of crops that can be stored, for subsequent supply to meet demand all through the year. However, many farmers, especially small and marginal, do not have holding capacity, they rely on the situational market valuation, or MSP rates (where applicable) for their earnings. A mechanism of valuating the annual demand and determining the annual weighted price for specific crops is not readily available. Such a system may be developed as part of market intelligence system, to inform and assist the farmers to evaluate their crop planning, production and selling decisions.

Price volatility also reflects on current market rules & regulations that do not encourage new players in the marketing system. This situation is slowly changing, but the change can be hastened. By promoting more players in the marketing system, the competitive environment is enhanced which results in improved efficiency and innovation. Business rivalry between the actors promotes market linked and logical changes in product, place and prices. The type of output, the range of transactions and the price volatility will get rationalised with a larger number of actors in the marketing system. As such, the model Agricultural Produce and Livestock Marketing, (Promotion and Facilitation) Act, 2017, needs to be wholeheartedly adopted to benefit farmers and consumers alike.

The model APLM Act 2017, redefines the market area as currently specified under the APMC Act, to remove entry barriers and permit new players in agricultural marketing. It also allows warehousing to be licensed as markets. The Act is more for facilitation than regulation and provisions are made for private markets to have a level playing field, with focussed intent for 'ease of doing business.'

The proposed liberalisation in the marketing system will not only support competition and inter-market connectivity, but will also promote establishing of organised and integrated agricultural supply chains. The dairy sector has the most comprehensive supply chain system, as an integrated value-system, and price volatility (at farmer's end or consumer's end) is minimal in this sector.

Organised supply chains, that apportion a fair share of the final value realised to each stakeholder in the integrated value system, is missing in the larger agricultural marketing system. Price volatility due to demand and supply gaps are opportunity calls in the system and are balanced by market dynamics. When the demand increases, supply tends to increase in proportion and the volatility is dampened and vice versa. However, for the

supply chain to respond accordingly, the availability of suitable agricultural post-production logistics infrastructure is critical. Ideas and inputs to minimise or counter price volatility, are part of the deliberations for this conference group.

### Warehousing and Value Addition

An efficient marketing system alone, is not sufficient to secure the desired benefits to farmers. To make an efficient system effective, in terms of its utility, particularly for small and marginal farmers, the sufficiency condition can be met by providing a mechanism that provides the farmers the opportunity to monetise their produce at a time of their choice. Warehousing provides this opportunity and is an important tool which allows time utility to enable the farmers to avoid an immediate sale in the surplus environment that occurs at each harvest period for certain commodities.

The National Institute of Agricultural Economics and Policy Research (NIAP - ICAR) had assessed that foodgrain demand will reach 281 million tonnes by 2020-21 (179 for direct household consumption and 102 in indirect demand like fodder, seed, industrial use, etc.). On the understanding, that about 70 per cent of this production will be stored, many have projected that this will mean the need for approx. 196 million tonnes of warehousing by 2021. However, when making such projections, it is important assess other aspects that improve inventory turn-ratios and free up warehousing space. The annual spread of production in kharif and rabi also needs to be kept in mind when planning new warehousing capacity.

The country has established widespread godowns and storage for foodgrains, including cereals and pulses. The Warehousing Development & Regulatory Authority (WDRA) estimated (in its 2015-16 Annual Report) the total available storage capacity at 126.96 million tonnes.

**Table 1: Status of available storage capacity in warehouses**

SN	Organisation / sector	Storage Size (in million tonnes)
1	Food Corporation of India (FCI)	35.92
2	Central Warehousing Corporation (CWC)	11.72
3	State Warehousing Corporations (SWCs) and State agencies	45.28
4	Cooperative Sector	15.07
5	Private Sector	18.97
	<b>Total</b>	<b>126.96</b>

*2015-16 Annual Report of the Warehousing Development and Regulatory Authority*

In addition, the Integrated Scheme for Agricultural Marketing (ISAM), sanctioned 65.9 million tonnes of new capacity since 2001, of which about 58 million tonnes is the new

capacity created as of 31 March 2017. An estimated 7 million tonnes in new capacity remains under construction. Including the capacity sanctioned by ISAM, it can be concluded that the total available warehousing capacity is about 185 million tons (in 2017) against an assessed need of 196 million tons in 2021.

It is observed that ISAM sanctions capacity to cooperatives and private sector and some level of duplication in data is likely. However, even if the entire capacity under private sector has been duplicated, the available storage capacity was still 165 million tonnes in March 2017. Warehouses created without financial support of government may not have been accounted for and such capacity would be in addition. Agro-processing industry may have also created some capacity for captive storage which may also not have been captured.

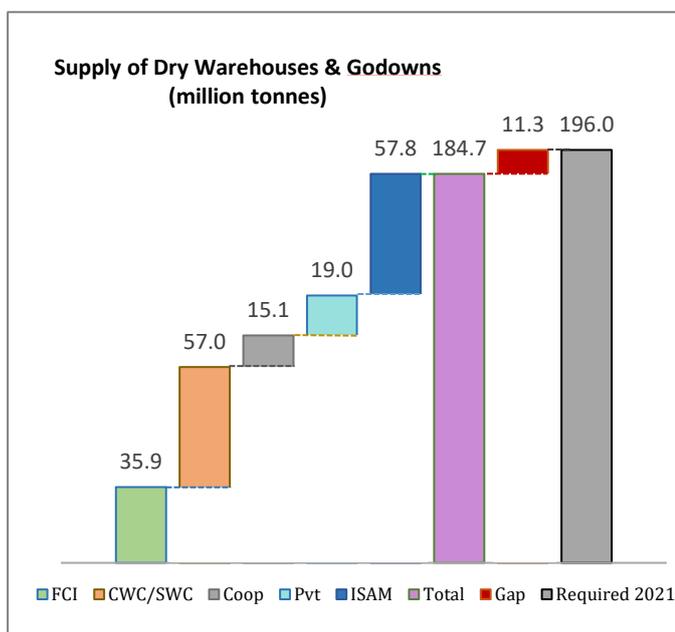


Figure 4: Availability of godowns & warehouses

The inputs from private sector inform of underutilised storage capacity in the country. WDRA has also confirmed that many States have excess warehousing capacity, and that the data on warehousing under private sector (18.97 mill tons) is not verified and actual capacity could be more. Indicators seem to suggest that the storage availability may be higher than assessed and the projected gap in storage may be far less than estimated.

An assessment of the current required warehousing capacity for foodgrains, oilseeds and milled sugar was done by the Directorate of Marketing and Inspection, by applying marketed surplus ratio (MSR) to 2015-16 production.

Table 2: Marketed surplus, distribution, warehousing assessment

Commodity	Marketed surplus (2014-15)	Ratio of surplus for warehousing	Storage required (million tonnes)
Foodgrains	193.41	50%	96.7
Oil seeds	23.41	55%	12.9
Sugar milled	22.54	60%	13.5
<b>Total capacity needed for dry warehousing</b>			<b>123.1</b>

Source: DMI assessments

The MSR is applied keeping in mind the distribution and seasonal spread of production of the major commodities. This assessment indicates that the current need for

warehousing capacity could be less than 130 million tonnes.

As per available data about capacity utilisation of storage available in public sector (under FCI, CWC and SWC, including both owned and hired) in the South, East, North East West and North regions is 58, 60, 63, 75 and 90 per cent respectively, with average of about 86 per cent. This clearly substantiates the fact that the north zone has better utilisation compared to States covered under south zone. The higher capacity utilisation in northern region is also attributed to the use by the central agencies to store stocks procured by them in that region. These inputs tally with those by the private sector which also inform of idle warehousing capacity.

There are some fundamental factors responsible for low use of warehouses by the farmers. The majority of farmers are marginal and small and may not consider storing the produce in a warehouse, or may be find other alternatives easier to manage. There is also a distribution asymmetry in the warehouses and these may not have always been constructed to suit the agricultural patterns or the shift in cropping patterns that can be expected in the future.

Access to safe warehousing, empowers farmers in two basic ways. The warehoused inventory not only allows the farmer a choice of time to sell their produce, it also opens the option to avail of pledge finance to meet their immediate financial needs. The inventory can be used as collateral, and farmer can benefit from the low interest credit, as facilitated by the government. The availability and access to agricultural warehousing is therefore important for the welfare of farmers.

#### **Post-harvest / Pledge loan system**

The mechanism of pledge finance to the farmers is to enable them to avail credit, when the prices are low and to sell their produce, when the prices are favourable. The aim of pledge loan scheme is to protect the interests of the farmers against distress sale of agricultural produce by providing short term loan against the pledge of the produce at zero/low interest rates. The idea is to provide access to both easy credit and safe and scientific storage.

Implemented by some state governments, the pledge loan was extended by the financing banks against warehouse receipts issued by the State and Central Warehousing Corporations. Subsequently, Agricultural Marketing Departments/Boards of various States also commenced providing post-harvest pledge loan, through their APMCs. There was however problems faced by financing banks, in assessing the quality of the stored agricultural produce and security of the inventory.

This gave rise to the emergence of Collateral Management Service providers, which are

being promoted by a consortium of banks and other related organisations. These Collateral Management Service Providers assay the quality of the produce, maintain and manage the produce, issue warehousing receipts and offer collateral security of the produce stored to the banks on behalf of the farmers who own the produce. They in turn charge their margin for the services provided. The banks are able to extend pledge finance to the farmers against the warehouse receipts issued.

The data on pledge loans by banks and non-banking (APMC/Collateral managers) sector makes it evident that the reach of the facility is very insignificant. The number of farmers availing pledge loan is minimal and some reasons for low credit flow under post-harvest loan are:

- i. Poor awareness level of the facility among farmers
- ii. Physical availability of warehouses accessible to farmers
- iii. Small lots in hands of small farmers, having minimal facility for aggregation
- iv. Complicated procedure for getting the pledge loan
- v. Lack of confidence among bankers about the management at the warehouses
- vi. Lack of harmonised tradable standards for use of warehousing, post-harvest pledge loan and on e-NAM

The low capacity utilisation of warehouses by farmers, is also attributed to the lack of knowledge about the mechanism of warehousing receipts and associated pledge loans for the farmers. These aspects may require special focus by extension services.

Additionally, the facility of interest subvention on post-harvest loan is not available to all farmers. There is provision for concessional post-harvest loan to small and marginal farmers against negotiable warehouse receipts (NWRs). The loan on the value of agricultural produce kept under pledge terms in storage, is eligible for the interest subvention of 2 per cent (same as for crop loans) for upto a period of 6 months. However, this is offered only to small and marginal farmers holding Kisan Credit Card (KCC). Those farmers who have not availed crop loans through banking system, are not eligible for the concessional interest on the post-harvest loan.

There is an obvious need to make farmers more aware of the pre-requisites and to extend more favourable terms for the pledge loans. As the collateral is the produce itself, suitable scientific storage of the produce is a pre-condition for the advance of the loan by regulated markets / banks. Facility to assay the quality and quantity is also important.

There is no pledge finance scheme being implemented by any agency in the States of Bihar, Jharkhand, Himachal Pradesh, Uttar Pradesh, West Bengal, Orissa, Assam, Arunachal Pradesh, Manipur, Mizoram, Meghalaya, Nagaland, Sikkim, Tripura, and Delhi.

### **Modernising warehousing**

The availability of warehousing is however not necessarily an indication of their accessibility and of their quality. The warehousing capacity includes storage of type 'Cover and Plinth' (CAP), besides covered warehouses and/or silos. CAP storage is more liable to incur losses and upgradation is indicated. Similarly, the regular warehouses require upgradation and registration with WDRA so that the crop inventory is secure under storage. Capacity created may not be suited for proper scientific storage which is necessary for the farmers to entrust their yield into the care of a third party.

Modernisation of warehouses for the purpose of safe-keeping farmer produce, will mean, not only the upgradation of infrastructure, but also regular monitoring and assessment of the warehousing operations and practices followed. Modernising the warehousing, therefore infers to all aspects that safe guard the value of crops stored, so that the value can be leveraged by a farmer, as owner of the inventory.

When preparing the District Storage Plan, the status of existing infrastructure may be examined. Further, emphasis should be bringing adherence to the standards of WDRA, so that the storage godowns can be certified as warehouses. This necessitates, restructuring of the existing godowns to meet the desired WDRA standards and ensuring, that new constructions are in strict conformity with the standard.

### **On-farm post-harvest value addition**

The farmers market their produce to various types of primary buyers. Broadly, the buyer is categorised by their own use of the agricultural produce,

- i) for own consumption (individual consumer, or an agro-processing industry), or
- ii) for trading (a wholesaler, or a commodity trader).

Each category of buyer has a specific preference and follow up activity. For example, the processing industry would prefer receiving the raw material of standardised specification, which can be immediately used as feedstock in their processing line. The consumer would prefer receiving produce that is clean and safe to use for immediate consumption. The trader would opt for uniform lots, package in a storable format. Such activities require an appropriate combination of assaying, grading, cleaning, packaging, consolidation and first mile transport. Each of these is an economic activity that adds value to final monetisation of the produce. Such activities are essentially carried out to pre-condition the produce for the market, and they can be expedited in the hands of farming communities, or with farmer groups. The infrastructure tools required for such preliminary market linked functions are minimal and can be established at village level or facilitated at existing rural market locations.

Lack of such facilitation means that the farmer, especially the small and marginal farmer, does not sell to the primary buyer, and instead is forced to monetise their production through a local agent or buyer's agent. When such activities are provided as a service to the farmer, these are termed as value added services (VAS). However, such VAS service centres are not provided for use of farmers in the existing marketing system.

Other forms of farm level value addition involves taking up micro and small scale secondary sector activities. These are processes that physically transform the produce into a value-added product. These are activities such as making jams, pickles, and others that can be undertaken with less capital intensive means. In these cases, the agricultural produce itself is converted into a new manufactured product, before it is monetised. Such activities are not uncommon, and is seen in case of cotton ginning, drying and crushing of chilli, jiggery making, silk reeling throwing and weaving, honey extraction, by-products such as dyes and prints, etc. Small scale naturopathy or ayurvedic units use agricultural resources and employment and these are another example of secondary agriculture. Such units are also intrinsically linked to agri-tourism.

Such secondary activities, when of micro-small cottage industry scale, utilising local resources in manpower and material, can be termed as secondary agriculture. Supporting secondary agriculture at farm level is important to achieve income growth and resource use efficiency from the farm output. Secondary agricultural activities support the farming community to maximise the value they can capture from every grain, drop and ounce of their production.

Emphasis is required on creation of multi-purpose low cost rural based agro-processing complexes/parks within a given time frame. For this, the Farmers Self Help Groups (SHG)/Cooperatives/Farmer Producer Companies be established with provisions of needed credit and policy incentives. Some action points are:

- Establishing processing and value addition units at strategic places in the rural areas/production areas for pulses, millets, fruits, vegetables, dairy, fisheries and poultry in public private-partnership (PPP) mode.
- Establishing food quality testing and phyto-sanitary laboratories.
- Helping farmers in marketing of their processed products (forward linkages).
- Skill development, particularly farmwomen in primary and secondary processing.
- Training in grading and packaging of horticultural crops should be a priority.

Secondary agriculture is viewed as small scale and involving labour intensive techniques, it will promote additional income opportunities at rural level. The marketing of the production from secondary agriculture will require special consideration. The output

may be directly consumable items, or used as input for other downstream secondary/tertiary stage processing activities by large scale industry.

### Industrial processing

The agro-based industries is probably the oldest industrial development having arisen alongside agriculture. The earliest examples would be wool and leather based manufacturing, fibres into textiles, pigment extracts, medicinal extracts, grain to flour milling, beverages, etc. The agro-processing industry is comprehensive and already the bulk of agricultural output is processed into consumable goods. For example, all fibre, wool and leather is converted into wearable items, wheat is converted into flour and cereals made consumable, oilseeds are extracted and tea, coffee, tobacco, rubber, etc. is processed by industry.

However, the country has a large wet market for fresh produce and even in case of milk, a bulk of the output is consumed in fresh raw form. In case of meats (poultry, fish, mutton, etc.), also, fresh wet markets prevail, rather than for processed products. In case of fruits & vegetables, in particular, there is minimal conversion into other formats of food products. As the consumer's preferences may shift from fresh fruits & vegetables to their processed items, the Ministry of Food Processing Industries supports setting up of processing units under the Kisan Sampada Yojna. The various agro-industries are promoted through various ministries such as textiles, chemicals & fertilizers, food processing, micro-small and medium enterprises, Ayush, etc.

The output from agro-based industries can broadly be categorised into non-food and food products, some of which are listed below.

Non-food processing industry, inter alia includes,

- Dyes & colour additives – pigments, intermediates, reactives, etc.
- Fibres – clothes and non-clothing materials, silk, paper, wool, leather, jute, bamboo, etc.
- Medicinal – hormones, enzymes, drugs, active ingredients, vitamins, sutures, etc.
- Bio mixtures – fertilizers, phytostimulants, biocides, vermicomposting, etc.
- Bio based fuel and oils – ethanol, butanol, lubricating oils, waxes, etc.
- Flowers – dried floral items, floral extracts, etc.
- Fodder and animal feed – pet food, cattle feed, etc.
- Tobacco and products – cigarettes, leaves, betelnut, scents, etc.
- Industrial chemicals – adhesives, acids, paints, detergents, cosmetics, softeners, etc.
- Industrial goods – rubber, laminates, composites, bone charcoal, building material, etc.

Food processing industry, inter alia includes,

- Beverages – tea, coffee, juices, wine, alcoholic, carbonated, etc.
- Food grains, Bakery & Confections – flour, breads, biscuits, sweets, pastries, etc.
- Edible Oils – cooking oil, fats, refined, raw, etc.

Milk & Dairy – butter, ghee, ice cream, cheese, powder, etc.

Meats - preserved, canned, dried, frozen, nuggets, etc.

Preserves & dehydrated fruits and vegetables - pickles, jams, chutney, frozen, etc.

Spices & Condiments – powders, mixtures, flavours, vinegar, sauces, etc.

These industries provide a market opportunity for the farmers, assuring demand for most of the output. These secondary sector activities take on highest importance, in case of agricultural produce that cannot directly be used by consumers, such as cotton, rubber, oils, bio-fuels, etc. The growth of the agro-processing industries is linked to availability of the raw material which is the feedstock for their manufacturing processes, and hence any uncertainty of farm output or supply of desired quality is a deterrence. Similarly, farmers that vertically integrate their output with the industry, are also dependent on their growth with that of the industry. Global level competitiveness and product innovation have become key success criteria for this economic sector.

### **Attracting Private Investment in Marketing Infrastructure**

Private investment in infrastructure for agricultural markets and post-harvest management of produce, has been observed mainly for creation of warehousing and cold storage. In case of dairy sector, collection centres for pooling the milk has also seen investment, but mostly in the hands of cooperatives. Similar collection centres for other produce types has not attracted sufficient investment from private sector except from certain cooperatives.

The need to modernise agricultural markets and to transform rural periodic markets into regular aggregation and marketing hubs, provides opportunity to attract private sector investment in these areas. However, investment with associated activities by the private sector is dependent on surety of having a level playing field. As such the marketing regulations require amending to attract private sector investments. The Model APLM At 2017, provides for such a level playing field and if adopted by states, will result in greater private sector interest.

Liberalising the marketing system will also generate innovative business models by private sector, to streamline the domestic and international trade in made in India produce. A proposal made by the Committee on Doubling Farmers' Income, to invite private sector in MSP procurement activities is worth mentioning. The proposal allows interested players to be exempt of stock limits and trade restrictions, provided purchase is at MSP rates. Such involvement can be expected to lead to investment in modern warehousing and market infrastructure that targets export trade.

The need for rural level aggregation and logistics hubs has been expressed repeatedly in the past. Such investments, require to be promoted. For this purpose, models similar to

custom hiring centres can be considered. Such hubs can be for captive supply chains by private sector. The states could attract investment by pre-designating land parcels at village level for such facilities. Partnerships between private sector and farmer groups can also be promoted by easing some restrictions on private sector shareholding in FPOs.

The fact that India is the largest consumption market for most of the agricultural output is an attraction. However, regulatory and other constraints deter private sector from playing a bigger role in agricultural markets. Permitting unencumbered access to the pan-India demand as a unified agricultural market is key to attracting the private sector.

To bring appropriate focus and to attract private investment, there is need to create a Division of Investments and Enterprise in the Ministry of Agriculture. The Division of RKVY may be upgraded to handle this role.

### **National Agriculture Market and e-NAM**

All classical marketing studies will advocate market integration across space and over time. However, in India the agricultural markets were divided and fragmented into a number of APMCs, which restrict the movement of commodities beyond their notified geographical area. This put the farmers at a disadvantage, disallowing them access to demand in other parts of the country. Understanding this, the government has paved the way to integrate the country as one market. A Central Sector Scheme has been introduced for promotion of a National Agricultural Market (NAM) to bring about a needed transformation in the agricultural marketing environment. A unified market can be best realised through a pan-India electronic platform which can facilitate the participation of buyers and sellers from all over the country. Therefore, the e-NAM network was inaugurated on 14-April-2016 and by March of 2018, a total of 585 markets will be integrated on the e-NAM platform.

In many states, farm harvest prices prevail at sub-optimal values and e-NAM will help check such market imperfections. Better price realisation for farmers will serve as an important incentive for raising productivity and production and in turn lead to higher growth of output.

The reforms proposed in the Model APLM Act 2017 also support integration and facilitation of cross regional markets and will support such transformation in domestic agricultural trade. The fortuitous roll out of GST with effect from 1-July-2017 has given a fillip to achieving a single one-tax and one-market system. A unified national market also mitigates unwarranted price variations across regions and is an important factor in damping unnecessary price fluctuations. States are recommended to adopt or adapt the Model APLM Act, 2017, to initiate necessary changes in agriculture marketing and to encourage a single national agriculture market.

The Centre and the States should work concertedly to achieve a truly unified national agricultural market (NAM) within a period of three years (ie. 2019-20). This can be achieved by increasing the coverage of markets under e-NAM to a cumulative of 1000, and promoting alternate online platforms in the public sector by the states, as well in the private sector, besides joint venture platforms. In order to facilitate this Government of India's e-NAM platform may serve as a common platform with inter-operable architecture, so that all other platforms can be integrated centrally, and with one-another.

### Agri-logistics including Integrated Cold-chain

The national agricultural market is not merely an electronic transaction platform. The exchange has to be fulfilled with physical transfer of the produce from seller to buyer. The role of agri-logistics is key to a successful NAM.

Agri-logistics is the backbone of the agricultural supply chain and the market intelligence is the brains behind the supply chain. With the recent impetus on development of basic support infrastructure, such as rural road networks, highways, electrification, the need and scope of appropriate logistics infrastructure has increased.

Besides warehouses, silos and cold storages, agri-logistics also includes village level aggregation hubs to create viable transportable loads in the first instance. The requirement of modernizing existing premises at primary and periodic markets to function as the source point for initiating traffic in agricultural produce is discussed earlier in this background note, under market architecture.



For efficient logistics connectivity, to network and integrate with demand within the

country and abroad, the need to promote multi-modal transport is necessary.

The logistics network is expected to cater to both the fresh produce supply chain and the processed product supply chain. In the first, the value as created by the farmer is directly communicated to buyers and end consumers. In the latter, the agro-processing industry taps into the fresh produce supply for their raw material needs, and releases the farmer from the chain to create new value for onwards connectivity with demand.

Both systems, are largely driven by private sector players, and the agri-business environment needs to be liberalised to promote development in this area. The involved logistics has synergistic functions, including in the specialised cold-chain.

Currently, agri-logistics is not provided any dedicated focus, being only a subject of concern under individual domains of separate agencies of the government. However, agri-logistics is now seen as a vital factor for the successful integration of rural India with the unified national market. Agri-logistics is also critical to safely connect and trade with international markets. It may be worthwhile to bring dedicated focus on agri-logistics by creating a Division on Agricultural Marketing & Agri-logistics.

#### **Post-harvest losses and management**

Post-harvest losses and its management is directly linked to the operations of agri-logistics. The physical loss that occurs in transit between farms to consumer, is attributable to poor post-harvest handling and logistics. The physical discard which happens in the hand of consumers is a waste that requires consumer education and awareness.

The loss varies by type of produce. It can be minimal in case of long established sectors such as fibre crops, leather, wool, tea, coffee, sugarcane, oilseeds, etc. These are either hardy crops or have well established links with the consumer. The consumer is the associated agro-industry who converts the raw material into textiles, leather goods, sugar, edible or industrial oils, etc. The transit period for the produce, between production and consumer may also be short for some of these raw materials.

On the other hand, the loss in case of some food crops can be higher for various reasons. For example, the food loss in case of most foodgrains or spices should be low, but can arise due to situations of unplanned production, where supply is more than demand and results in excess inventory which then extends to non-viable holding periods. However, and obviously, the food loss in case of perishable produce, mainly fruits, vegetables and meats is the highest. In case of milk, though highly perishable, an efficient logistics chain has kept the losses at minimum, whereas its waste in hands of consumer could be high.

**Food Loss:** post-harvest, in-transit, pre-consumer | **Food waste:** consumer-end, post-monetisation, post-retail

Modernising the post-harvest logistics system and its management can drastically reduce the post-harvest loss, which means more value is available to get monetised to the benefit of the farmers. Food loss is mainly a factor of the time taken to connect with intended consumers. When the consumer is local to point of production, the loss is usually minimal. This was the case when sustenance farming was the norm, and when supply was sufficient to meet demand from the local consumers.

If all the tomato produced can be absorbed by consumers local to the production area, then there would be no cause for loss. However, production has now increased to levels where the supply needs to be connected with demand at distant locations. The time taken to reach demand is also aggravated by seasonal supply, viz constant demand. Therefore, annual harvest of potato or apple is managed to ensure supply all through the year. In case of meats, though the harvest can be timed, the losses in transit can be high if the consumer is just a few hours away.

In all cases, agri-logistics including transportation plays an important role. Agri-logistics itself is a cause of food loss, as it involves handling under custody. Poor logistics handling practices, therefore, also result in damage to the produce and discards. Supply that is uninformed, without market intelligence, also results in non-saleable quantities, which eventually perishes and adds to the physical loss. Any quantity that cannot be readily monetised, invariably perishes as a loss. Demand expansion, is affected by deficiencies in the logistics connectivity developed so far, leaving the supply chain for perishable produce extremely short. The inadequacy of technology aided farm-to-market logistics, contributes to high food losses especially in case of perishable foods.

Food loss is mitigated in two ways, i) by connecting the produce with consumer, thereby bringing it to gainful use, and ii) by providing care and safe handling during the saleable life-cycle of the produce. Certain types of crops, can be diverted to other users, such as the food processor. However, the output from processing units, especially with expiry dates, must also have demand from market and would also need to be connected to consumers to avoid post-production loss.

Excelling at cultivation, to add to yields, is bound to result in wasted resources if the output is not finding access to markets. In fact, non-marketed surpluses end up adding to the net cost of food and feed inflationary pressures. Waste and rejected produce, needs to be recovered and monetised through food and non-food processing. Processing units can be supported by guiding in-range farmers to produce the necessary processing variety crops for use as dedicated raw material for making other finished products.

Reducing the loss of primary agricultural produce, results in more quantity that can be monetised and this adds to the total value that gets shared with the primary producer, the farmer. Various studies are done for assessing food loss, and though they may present differing per cent of loss, the need to mitigate losses in the market cycle of supply is evident. Since farmers are tending to shift into high value production such as horticulture, livestock and fisheries, the concerns on food loss and market connectivity take on greater importance. The integration of rail, road and water modes of transportation is going to play an important role in the future.

Food loss is minimised with modern agri-logistics that is multi-modal to minimise handling damage, is suited to handle the type of produce, and can efficiently connect the produce with markets around the globe, including domestic.

### **Role of FPOs and Contract Farming**

It is well known that of the more than 137 million operational farm holdings, the largest size group is the small holders. They account for more than 85 per cent of the land holding, predominantly populated by land sizes of an average of 0.65 ha. The fragmentation of farms is a key concern in the economic viability of farms. From the perspective of produce marketing, the farmers are unable to individually produce sufficient quantities to connect efficiently with markets. This results in the need for aggregation of production into viable marketable and transportable lots, which is taken up by intermediary agents and opportunistic traders. This opportunity should rightfully accrue to the farmers, provided they collaborate as a farmer producer organisation. Working as an FPO, opens other opportunities too for farmers, such as in case of inputs, credit, mechanisation, etc. in their production cycle.

The concept of FPO formation is not merely for mobilising of individual farmers into a transactional group, but to create a functional pool of land and resources that collaborates in their production and post-production activities. Collaboration in planning and producing common set of produce, results in a consolidated output of a scale that brings improved viability, and leads to a transformation of the supply chain. FPOs are currently not formed on the basis of availability of adjoining farm holdings or on prior basis of preferred crop types. In the future, development efforts can be undertaken to support collective or collaborative cultivation of specific crop types for targeted markets.

Since initiation in 2012, the country has organised as few as 1080 FPOs. After having accepted the importance of FPOs in India, it would not be appropriate to remain at the starting line, as is the case today. Village producer organisations (VPOs) can also be developed as a joint venture of FPOs, or JV of a private company and FPO, or with public private participation, such that an entire village region is developed for a predetermined set of agricultural produce, as well as with post-production activities. For example, a

region having strength in producing fibre crops can be developed as a VPO to include small handloom, weavers or handicraft units.

Similarly, a village that has appropriate agro-climatic environment for mangoes can also intercrop tomato and other vegetables and take up post-production management such as aggregation, packaging, branding and dispatch to markets. An example in grapes around Nasik, where entire regions around villages are cooperating to expand productivity and in post-production is already evident. A VPO would essentially be a cluster of farms in a village region that will function as a collective for predetermined outputs. Such a mechanism of natural clustering of activities can be expected to find greater buy-in and alignment with activities of the local population.

Collaboration of farmers to collectively cultivate and harvest a common set of produce, is not sufficient. There is subsequent need to advance efforts to connect the produce with markets farther afield. Without suitable market connectivity, the output from such collaborative farming will be directed to near-farm markets only, which will lead to a localised glut, and associated price repercussions. Therefore, the production from collaborative farming will need to be linked to multiple demand centres to maximise on the market opportunities and economies of scale achieved.

Most importantly, once meaningful scale is achieved for the transactions on both inputs and supply side, such collaboration can shift the control of the value system into the hands of the FPOs. In effect, farms can generate benefits emanating from the farmers coming together to run their operations of input and output management collectively, thereby harvesting the economy of higher scales, without diluting the status of their land ownership.

Considering the critical need to economise on the cost of production, as also realise efficient post-production transactions, the scaling up of farmer producer organisations (more particularly companies) and village producer organisations (VPOs) across the country should happen quick and fast. In the view of this, a minimum of 7,000 number of FPOs & VPOs should be targeted by 2022-23 and double that target number in the six years thereafter.

Besides FPOs, contract farming is another option to address many traditional ills, such as lack of market connectivity, long chain of market intermediaries, ignorance about the buyer demands, etc. Contracts from bulk consumers can serve to offer regular and consolidated demand to farmers and an assured exchange against predetermined quality and quantity. Contract farming allows farmers to vertically integrate with specific and organised market channels.

Contract farming refers to a pre-season agreement between the farmers and a sponsoring

company, that promises the former a price at which the latter will purchase the produce post-the harvest. Such an agreement offers the farmers to transfer the future (post-production) price risk to the sponsor. Contract farming, which in a way is a futures trade, helps the farmers to focus on their production for optimal yields, without the anxiety of post-harvest price situation. Since the contract farming agreement is generally with a group of farmers, whose land may be contiguous or in clusters dispersed within a confined geography, the farmer-members will also come to enjoy certain other advantages related to infrastructure and transaction facilities, which may not be financially feasible to own individually.

A draft Model Contract Farming Act has been released by the Department of Agriculture & Farmers' Welfare. The model Act all encompassing, across all sub-sectors including field crops, horticultural crops, dairy & livestock, poultry, fishery etc. The draft Act is designed to protect the farmers' interests including land rights and provisions for a win:win situation for both parties in eventuality of untoward market situations.

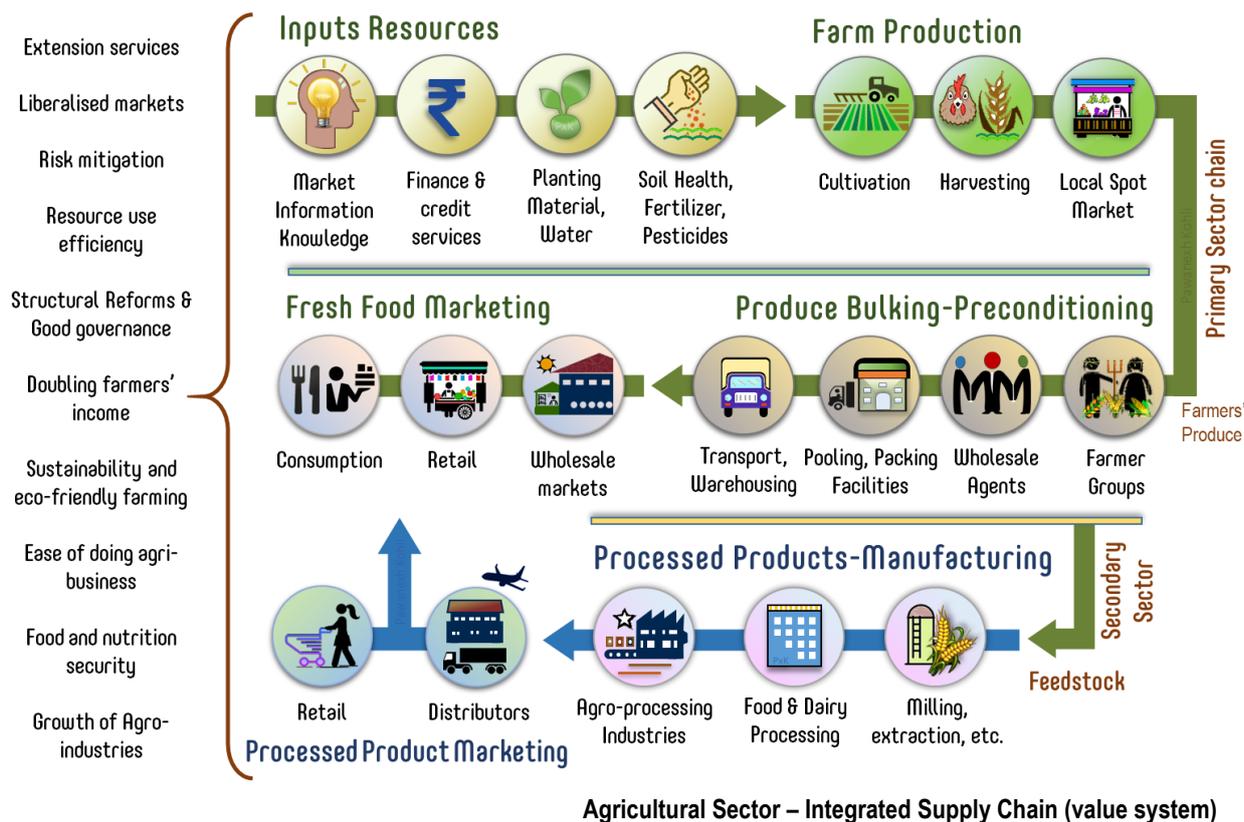
Combined with FPOs and VPOs that are designed to promote the collaborative and natural pooling of cultivable land, and contract farming that intrinsically supports farmer groups, the bane of Indian agriculture, i.e. land fragmentation, can be converted into an advantage. The various states should accordingly consider aggressive promotion of farmers groups and contract farming to bring about the desired growth outcomes in income and productivity.

### **National Platform for Agri-value systems in the country**

Agricultural projects have inherently moved from a phase of intensive cultivation and production, towards one that requires greater integration with market demand. The farm income based approach to practicing agricultural marketing demands a 'fork-to-farm' route in preference to the commonly advocated 'farm-to-fork' option. If the purpose is to transfer optimal monetary returns on his produce, the farmer would then need to grow what can sell, and reach out to the end-use point without loss of quantity and comprise on quality. Hence, there is need to transit from production led agriculture to market-led agriculture.

The overall agricultural value system is the overarching supply chain that involves inputs, production and the output marketing. Multiple actors are involved, each attempting to add to their individual competitive advantage by optimising their own activity. A value system approach requires coordinating the range of interrelated activities by multiple stakeholders. Each stakeholder operates an independent value chain in the larger supply chain. The integration of enterprise level value chains, for a common outcome to meet final market demand, makes an effective and efficient agri-value system.

To approach agriculture as a market-led business enterprise, it is important that the starting point is market linkage, in the form of market intelligence. Thereafter, the remaining activities get guided by the forecasted demand and price, so as that all the actors in the system, can integrate their functions into a large agri-value system. The value captured within this system, gets apportioned to the various actors in the supply chain. The integration of such multifarious activities, requires facilitating all stakeholders for achieving a shared outcome. Developing the anchor stakeholders of crop specific or region specific supply chains will require an institutional mechanism.



Agricultural marketing, especially for food crops, is becoming increasingly cross-geographical and needs to address the demand and supply at the unified market level. To support a transformation of the food system in India, in partnership with private sector enterprises, a national level platform will bring about concerted gains to farmers, in tandem with other recent initiatives that allow for the one-nation market to flourish.

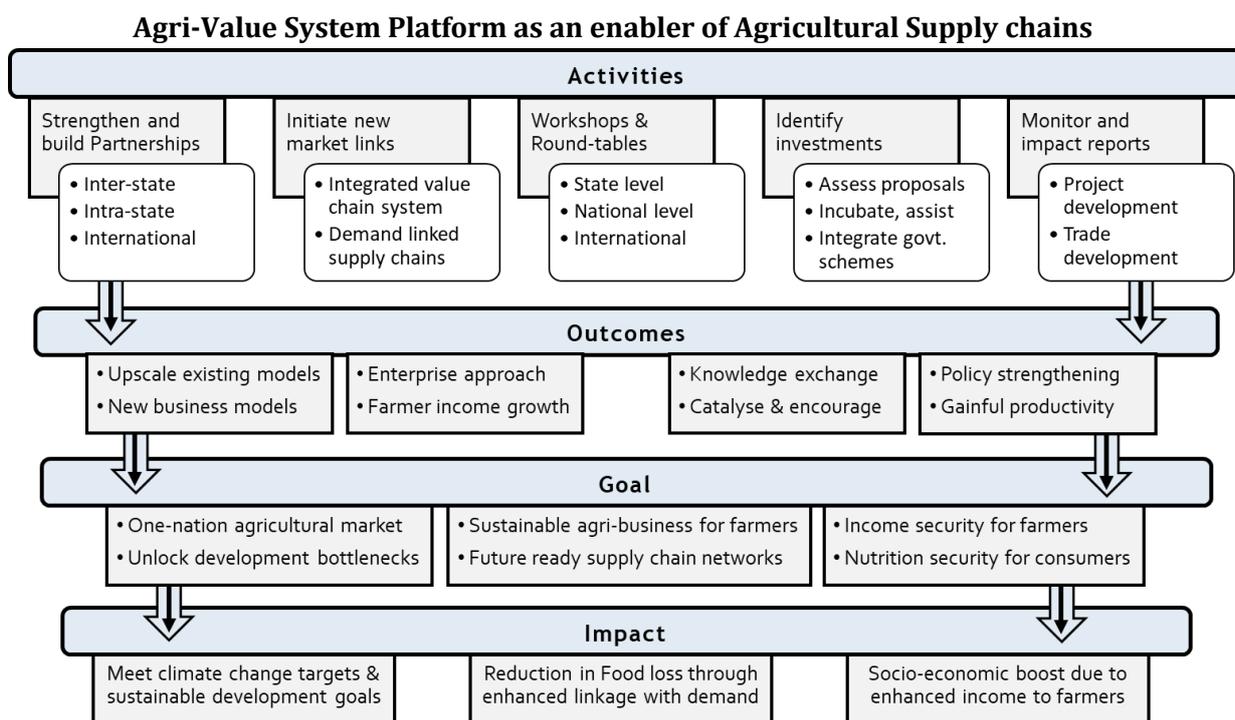
A National Agricultural Value System (NAVS) platform is recommended, to facilitate and guide the development of modern supply chains that will be cross regional in nature and promote demand based trade in agricultural produce.

The framework of the proposed platform will be in partnership with think-tanks, industry, academia, donor agencies and government. The agenda will be to promote

commercial projects that will function as a market linked system or an integrated supply chain of agricultural produce. The outcome focus will be to enhance the value captured by farmers to lead to doubling of their income.

The agri-value system platform will have a short term approach to dovetail ongoing schemes to support projects that improve the throughput of produce from farms to secondary markets, skipping intermediary markets. For the long term, the proposed platform will also serve to optimise the value chain activities of farming units, by providing value added inputs such as market linked crop planning, resource management, partnership with other supply chain actors, coordinate extension activities and assist in improving access to local market channels.

A value system contains a permutation of organically linked value chains, integrated into a supply chain. The value system platform would be one that helps to on-board and integrate the sub-systems of multi-stakeholders from government, non-government and private sectors as working partners to meet the desired objective. The primary objective would be to strengthen market linkages of farmers, alongside the development of market yards / alternate markets, cold chains and food processing units.



The scope of such a Platform will be to support both the National and State governments to catalyse investments and collaborations on projects that have multiple value chain partners, to unlock bottlenecks in implementation and scaling of such projects, and providing the enabling policy support to strengthen the agricultural marketing

environment. The platform would function under the model of public private partnership, distanced however from day-to-day functioning of the government. The PPP mode of function has potential to bring the much needed synergy in knowledge, experience and finances for triggering greater competitiveness in agribusiness.

The proposed National Agri-Value System (NAVS) platform is envisaged to have a systems approach and target integration among enterprise level value chains to bring about the following benefits:

- a. Move away from disjointed sectoral schemes & programs in agriculture to well designed, commodity based integrated value chains that connect all the farmers, big or small, to their consumers - wholesalers, retailers, processors & exporters.
- b. Prepare an ecosystem of value chain systems that integrate market demand with production, post-production & finance in a seamless manner, to ensure that the planned reforms in agricultural marketing, land leasing, contract farming and farmer producer organisations, have a base in commercial enterprises.
- c. Promote greater private investment through adoption of Public Private Partnership framework across the system wide value chain for linking farmers to the market in an efficient & effective manner.
- d. For each value chain, strengthen existing extension & agricultural advisory services by promoting relevant best practices like soil management, raised bed planting, ridge and furrow method of sowing, sub-surface irrigation, precision farming, post-harvest handling, commercial negotiations, market linkages, as well as credit and insurance facilitation.
- e. Diversify the portfolio of integrated value chain systems from crops to animal husbandry, dairy, fisheries, horticulture, pisciculture, sericulture, aqua culture, mushroom cultivation to enhance the farmers' income.
- f. Develop strong institutions of farmers to get them integrated into the larger supply chains through promotion of FPOs/ VPOs / cooperatives / SHG / JLG / Trusts / NGOs and get them federated along regional or commodity based market linked enterprises.

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This background note draws heavily upon the Report of the Committee on Doubling Farmers' Income, especially Volumes III (Agri-logistics) and IV (Agricultural Marketing). Members of Group 3 may review these volumes of the DFI Report, which are hosted on <http://agricoop.nic.in/doubling-farmers>, for more details on the topics under discussion.

29-Jan-2018