

# IAS PARLIAMENT

*A Shankar IAS Academy Initiative*

## Kurukshetra

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**SHANKAR IAS ACADEMY<sup>TM</sup>**

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## INDEX

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Sl.No.	Topics	Page No.
<b>1.</b>	<b>Boosting Farmers Income Through</b>	
	<b>Efficient Cold - Chain Network .....</b>	<b>3</b>
<b>2.</b>	<b>Transforming Agriculture for Farmers' Prosperity.....</b>	<b>4</b>
<b>3.</b>	<b>Women in Agriculture : Marching Towards Success.....</b>	<b>5</b>
<b>4.</b>	<b>National Agricultural Market : New Horizon</b>	
	<b>for Agri-Business .....</b>	<b>6</b>
<b>5.</b>	<b>Quality Seeds and Planting Materials In Doubling Farmers</b>	
	<b>Income : Role And Way Forward .....</b>	<b>8</b>

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## KURUKSHETRA – JUNE - 2017

### 1. Boosting Farmers Income Through Efficient Cold - Chain Network

India is one of the largest producers and consumers of food products. This sector plays an important role in contributing to the development of rural economy. Domestically the spending on the food and food products amounts to nearly 21 percent of gross domestic product of the country.

The most important problem faced by the Indian agriculture is the highly inefficient supply chain. Because of lack of cold chain infrastructure and also food processing industry, about 50 percent of the food produces gets wasted.

A well developed food processing industry is expected to increase farm prices, reduce wastages, ensure value addition, promote crop diversification, generate employment opportunities as well as export earnings and thereby helping farmers to increase their incomes.

A **Cold chain** is the uninterrupted handling of the product within a low temperature environment during the post harvest steps of the value chain including harvest, collection, packing, processing, storage, transport and marketing until it reaches the final consumer.

The major components of the cold chain include :

- Packing and cooling of fresh food products
- Food processing (Freezing of certain processed foods)

- Cold storage (Short term and long term warehousing)
- Distribution (Cold transport and temporary warehousing and temperature controlled storage)
- Marketing (refrigerated or freezer storage displays at Wholesale markets and shops)

#### **Benefits of Cold Chain Network:**

Establishment of modern cold chain networks not only reduces the food losses, but also empowers the farmers to reach across to more distant markets.

Availability of cold storage facility to the farmers removes the risk of distress sale to ensure better returns.

Fresh foods continue to metabolise and consume their nutrients throughout their shelf life through respiration. This can be minimised by cold storage facility and thus it lessens perishability.

As the cold storage facilities reduces the transpiration, the water content in the perishables is retained and causes less shriveling.

As controlled temperature is maintained it increases the resistance to the ethylene production. Further it inhibits the ethylene production and slows down the ripening process of fruits.

Efficient cold chain network reduces the post harvest losses and it generate additional income to the farmers.

It will be helpful in shifting the farmers to more market driven and profitable farming activities.

It improves the quality and hygiene of food products.

Reduces wastage of perishables, add value to the agricultural produce and create huge employment opportunities especially in the rural areas and helps in preventing distress migration to the urban areas.

Helps in stabilising the prices of food products and contain inflation in the country.

**Challenges** like less awareness among farmers, better planting and seed material, information dissemination lacunae, grading and sorting facilities, low private sector investment, R&D facilities lacking are some issues which hinders the growth rate of cold chain networks in India.

These issues must be addressed at the earliest, so that huge benefits can be reaped through the cold chain network in the years to come.

## 2. Transforming Agriculture For Farmers' Prosperity

The transformation of some sectors of Indian economy following economic reforms in early 1990s lifted growth rate of total economy from 4.2 percent during 1971 to 1991 to close to 7 percent after 1991.

However, agriculture sector which comprised over 40 percent of Indian economy and 59 percent of workforce in the year 1991, did not experience any permanent change in its growth rate.

The Government's goal of "Doubling Farmers' income by 2022" requires transformation of agricultural production as well as marketing through a

multi pronged strategy that involves increase in productivity, reduction in average cost, better price realisation for farm produces, expansion of allied activities and shift of farmers to nonfarm occupations.

### 3. Reasons for the Present Situation:

Use of certified quality seed distributed by various agencies is quite low. The development of new varieties of seeds are also in slow pace which does not contribute to the betterment of agriculture.

Diversification of crops is largely absent in the country. More than one crop is grown on less than 50 percent of the area under cultivation.

Improved technology has not yet reached large number of farmers which is evident from the fact that more than 30 percent area under cereal cultivation is under the traditional varieties.

Despite large investments in irrigation, more than half of the cultivated area does not have the access to the irrigation facilities.

High value crops like fruits and vegetables, which have much higher productivity as compared to other crops are raised on less than 10 percent area.

Advance world is moving towards precision farming using sensors and other scientific tools for exact practices and application of inputs. Absence of this modern farming practice in India is an impediment to the Indian agricultural transformation.

The lack of investment and commitment of public and private sector in agriculture also worsens the problem.

In many states, the farmers get 10 - 20 percent lower price than MSP even for wheat and paddy where a large part of marketed surplus is procured by the government.

***The Way Forward for Transformation:***

The more subtle mean of ensuring better prices to farmers, without causing pressure on consumer prices, is through reforms in the system of marketing. eNAM is on this way forward to ensure high price realisation for farmers.

NITI Aayog has been pleading with the states to remove restrictions on allied activities like felling and transit of trees and setting up of wood based industries and bring new land leasing laws.

India meets 40 percent of its timber need from the imports which can be easily met from the domestic production on farmers field. This practice of cultivation of trees on farm lands must be encouraged for increasing the farmers revenue.

Along with crops, we need to tap the potential of livestock which contribute 25 - 30 percent of farmers income.

Producers institutions like FPOs are very important for small holders agriculture. These aid the farmers in effective price realisation of farm produce.

Food processing in rural areas has an important role to procure raw material and provide employment. It reduces the pressure on the agriculture sector to some extent.

Farmers have to be helped to get higher prices and some of them need to be moved out to nonfarm occupations. This can be achieved through the effective participation of public and private sector.

**3. Women In Agriculture : Marching Towards Success**

Agriculture is the backbone of Indian economy. It defines the traditions of the family, relationships in the society and gender roles in the country.

Women play a central role in all agricultural activities from planting to harvesting to post harvesting operations. As per recent survey women participation rate in agriculture is about 44 percent.

According to FAO, Indian Women's contribution has a share of 22 percent in fisheries sector. Women's work starts from basic level of farm related activities to unskilled jobs like sowing, transplantation, weeding, harvesting and post harvest activities like winnowing, processing, storage etc.,

**Challenges:**

There has been a major change in the cropping pattern in recent times. With such introduction of new modes of agriculture such as export crops, floriculture, horticulture, rural women feel out of place.

With diversification of agricultural and non agricultural activities, uneducated women fail to match the need of the hour which costs their livelihood.

Diversifications in the agricultural sector to meet the problem of overpopulation, has led to the decline in crop production and in per capita availability of food. This crisis in family is often balanced by women leading to nutritional and health problems.

Even though belonging to an agrarian country, the Indian farmers bear the high input cost of agricultural production and therefore, often run into debt trap.

Decreased yield due to inadequate rainfall, low produce price and absence of suitable counselling services, sometimes drive the farmers to suicide leaving their wives in debt.

Critical natural resources like land, water and crops are not equally available to women. Women hardly enjoy the property ownership rights.

Women are deprived of decision making in important matters like purchase, mortgage, sale of land, cropping patterns and household affairs.

Women's contribution in research and study in the field of Agriculture is often overlooked and their contribution is neglected.

#### **Programs for the Empowerment of Women :**

**National Horticultural mission** recommends organising women in self help groups and assisting them with farm inputs and technological and extension support to make them self reliant.

The aim of **Rural Go-down Scheme** is to provide assistance in the form of subsidy to women farmers to promote grading, standardisation and quality control of agricultural produce to improve the marketability.

The aim of **National Mission on Agriculture Extension and Technology** is to set up kitchen garden, and to promote farm activities such as piggyery, goat - rearing, bee keeping for Women food security groups.

Under the **Agri clinics and Agri business centres** scheme 44 percent composite subsidy is provided towards the cost of project to women, as compared to 36 percent to men. Also, one day is specially allocated to cover areas of core competence for women farmers in programmes of Akashvani and Doordarshan.

Assistance is provided under **National horticultural Mission** for agriculture mechanisation, procurement of agricultural machinery and equipment on subsidy.

Mandatory development of **one women scientist** in each of 668 krishi vigyan kendras.

Training **women cooperatives** to manage funds and to run their cooperative in a professional way.

There is a provision in **NFSM** to provide marketing support for value chain integration to SHGs of women, for local marketing of pulses and millets.

Training programmes are conducted under **Sub Mission on Agriculture Mechanisation** on use of gender friendly equipment, by women farmers.

Under **National Mission for Sustainable Agriculture**, 50 percent of the fund is utilised for assistance to small and marginal farmers, of which at least 30 percent should be women farmers.

The aim of **Mahila Kisan Sashaktikaran Pariyojana** is empowerment of women working in agriculture sector. The scheme strives to increase participation and productivity of women in agriculture.

#### **4. National Agricultural Market : New Horizon For Agri-Business**

With nearly 58 percent population continuing to depend upon agriculture for their livelihood, the critical role of this sector cannot be repudiated.

Government has rolled out a large number of programmes to improve yield levels on substantial basis, it recognises the need for creating a competitive market structure in the country that will generate marketing efficiency.

**National Agricultural Market (NAM)** is a pan India electronic trading portal which networks the existing APMC mandis to create a unified national market for commodities. While material flow happens through mandis, an online market reduces transaction costs and information asymmetry.

### **Objectives of NAM:**

A national e-market platform for **transparent sale transactions and price discovery** initially in regulated markets.

**Liberal licensing** of traders buyers and commission agents by State authorities without any precondition of physical presence or possession of shop premises in the market yard.

**One licence** for a trader valid across all markets in the state.

**Harmonisation of quality standards** of agricultural produce and provision for assaying infrastructure in every market to enable informed bidding by buyers.

**Single point levy** of market fees i.e on the first wholesale purchase of the farmer.

Provision of **Soil testing Laboratories** in/ or selected mandis to facilitate visiting farmers to access this facility in the mandi itself.

### **Benefits of NAM:**

For the farmers, NAM promises more options for sale. It would increase his access to markets through warehouse based sales and thus obviate the need to transport his produce to the mandi.

For the local trader in the mandi, NAM offers the opportunity to access a larger national market for secondary trading.

Bulk Buyers, processors, exporters etc., benefit from being able to participate directly in trading at the local mandi through NAM platform, thereby reducing their intermediation costs.

NAM enables higher returns to farmers, lower transaction costs to buyers and stable prices and availability to consumers.

The NAM will also facilitate the emergence of value chains in major agricultural commodities across the country and help to promote scientific storage and movement of agri goods.

### **Challenges:**

Although the system looks simple, for farmers, it may not be as simple as expected. Most of the farmers have the habit of selling their yield to a local produce aggregator than taking their crops to mandi.

Even if some farmers take them to mandis, their yield would be very small to excite distant buyers binding online. In this context, the possibility for better price discovery is quite limited.

Quality variations in commodities at both the state and national level pose a challenge. For example, Wheat in Punjab and Haryana is of medium quality whereas those from Madhya Pradesh and Gujarat are superior quality.

Electronic platforms like NAM would be right platform only for trade standardised commodities and for the rest it may not be.

e-NAM has the potential to transform Indian agriculture from traditional to entrepreneurial and profit making venture. But this will only be possible with supplementary additions in infrastructure, easy credit disbursal and vigilant inspection and implementation.

## **5. Quality Seeds and Planting**

### **Materials In Doubling Farmers**

#### **Income : Role And Way Forward**

According to the latest census data, India has more than 270 million persons employed in the agricultural sector nearly one fifth of the country's population and about half of its workforce.

Lower level of compounded growth rate of the farmer's income as compared to the other sectors has been identified as the major reason for the agrarian distress which has been prevailing in rural India.

Lack of quality inputs is one of the main reason for the agrarian distress. The Indian government has devised seven point action strategy and 'providing quality seeds and planting material along with nutrients based on specific field soil profiles to the farmers' is one among them.

Sustained increase in agriculture production and increased farmers income necessarily requires continuous development of new and improved varieties of crops and efficient supply system of good planting materials.

The countries seed program primarily recognises to the limited generation system for seed multiplication. It recognises breeder seed, foundation seed and certified seed.

The seed program in India tries to provide adequate safeguards for quality assurance in the seed multiplication chain to maintain the purity of different varieties of crops as it flows from the breeder's field to farmers.

The main impediment in the seed industry is over dominance of the unorganised sector comprising mainly of farm saved seeds and dealer providing spurious seeds in the seed industry.

New varieties need to be tested and seeds of these varieties should be made available to the farmers for cultivation in the regions in which it is suitable. government should denotify such old varieties that have no demand or relevance in the present context.

For achieving the desired level increase in income of the farmers, seed replacement rates (SRR), should be adequate (It is a measure of how much total cropped area was sown with certified seeds in comparison to farm saved seeds).

Regulatory measures for quality seed production have to be tightened so as to discourage the sale of spurious seeds to the farmers.

The seed companies should be made responsible for the poor performance of the seeds supplied by them and a penalty mechanism for the companies and compensation strategies from seed companies to farmers need to be introduced instead of bearing all the burden of the crop failures by the farmers.

Research institutions must develop quick seed testing kits for the detection of spurious seeds at the time of sale itself and extension system need to educate the farmers and registered dealers about the use and need of such technologies for income enhancement.



Quality of planting material can be assured by exploiting the advantage of tissue culture technique. It will also help in promoting horticultural crops from seed based to sapling based planting.

The open pollinated varieties (OPVs) produced by the farmers are usually genetically diverse and not very uniform in quality of produce. But hybrids are uniform and yield 10 to 25 percent more than OPVs and hence increases crop productivity.

Hybridisation can also be very useful in developing seed varieties which are drought and pest tolerant, enabling adaptation to climate change or mitigating and other yield penalising risks.

Apprehensions about health hazards and conflict with Indian ideology have slowed down acceptability of GM food crops among our farmers. But it should be introduced after resolving the problems. If this happens, transgenic seed will have a major impact on seed business and farmer's plight.

Seed village, wherein trained group of farmers are involved in production of quality seeds of various crops should be created and facilitated in every village to upgrade the quality of farm saved seeds.

Suitable Infrastructure should be created to keep the seeds for some time without losing the viability and quality. This will lead to the availability of quality seeds in a cost effective way to the farmers.

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