



# A HARVEST OF HOPE: SEVEN SCHEMES NURTURING INDIAN AGRICULTURE'S

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# INTRODUCTION

Agriculture has been the backbone of the Indian economy for years since independence. During independence, agriculture contributed more than half of the country's GDP. Though its contribution decreased with the increase in industrialisation and service sectors, it still accounts for around 18 per cent of the GDP and provides employment opportunities to more than 50 per cent of the Indian population. Various schemes implemented during the times of the green revolution such as the High Yielding Varieties Programme, Intensive Agricultural Development Programme etc., have led us to significantly increase the production levels. Though we have achieved self-sufficiency in food grains, certain threats are looming agricultural sector at present. Threats such as

loss of soil fertility, shrinking water resources, degrading natural resources, increasing land fragmentation, climate change, increasing cost of inputs etc., are impacting farmers' prospects. The Government of India (GOI) from time to time enacts various schemes to assist the farmers carry out farm activities effectively and also to make sure that farmers earn respectable incomes. Recently, GOI heeding the current threats poisoning the agricultural sector approved the operationalisation of seven new schemes to enhance farmers' livelihoods with a total outlay of Rs.14,235 crore. Understanding the importance of implementing such schemes will be useful for all agricultural stakeholders, which this article aims for. All the seven schemes are described in the sections below:



## 1. Digital Agricultural Mission

With the penetration of mobiles into majority of the households both rural and urban, and access to the internet, every piece of information is available at the fingertips of everyone. The farming community can also capitalise on such technology to improve the efficiency and ease of operations. However, there is a need to create a strong database on various metrics related to agriculture for the government and farmers to be able to leverage the technology. GOI under the Digital Agricultural Mission aims to achieve that with a focus on two foundational pillars namely Agri Stack and Krishi Decision Support System.

### Agri Stack

Agri Stack is being set up as the foundation for digital agriculture wherein farmers can avail various services such as access to inputs, credit, advisory services, market access etc. It relies on various data and digital services. GOI under this plan is developing a Farmers' Registry, Crop Sown Registry and Village Landmap Registry. Under these registries, the details of all the farmers, their land records, and the crops grown will be collected using

digital technologies such as smartphones, drones, satellite images and stored. State governments will compile the necessary data which will be later stored by the central government under Agri Stack. A unique farmerID will be assigned to farmers which will be digitally verifiable. This ID will be useful for the transparent delivery of services and scheme delivery by the government.

### Krishi Decision Support System (KDSS)

Krishi Decision Support System is being developed to facilitate all the diverse stakeholders such as farmers, policymakers, scientists etc for making informed decisions. It will feature various data such as geospatial, weather/satellite, groundwater availability, drought/flood monitoring and modelling for crop yield and insurance. With all such data layers, KDSS will act as a repository integrating various ecosystems that can be capitalised by the stakeholders. It can be used for sustainable resource usage, crop planning, crop condition, verifying insurance claims, timely response during floods/droughts, etc. GOI has allocated an outlay of Rs. 2817 crores for this scheme.



**Figure 1:** Seven schemes for the agricultural sector recently approved by the Government of India



## 2. Crop science for food and nutritional security

Research and education in pure sciences is a lynchpin for agriculture as the eventual outputs from such sciences will result in newer crop varieties, technologies and management practices. There is an imminent requirement for climate-resilient varieties among farming communities as extreme weather events are becoming a new normal. Though we have attained self-sufficiency in food grains, we still exert dependence on imports for oilseeds and also pulses during lean production times. Also, India is a leading producer of milk, milk products, eggs, meat etc., with their growth rates exceeding that of agriculture. Thereby, it is also pertinent to improve the availability of fodder crops by increasing the productivity and area cultivated. GOI is vying to address all the above issues by implementing this scheme where an outlay of Rs. 3,979 crores has been allocated. It focuses on

- ✓ Research and education
- ✓ Plant genetic resource management
- ✓ Genetic improvement for food and fodder crop

- ✓ Pulse and oilseed crop improvement
- ✓ Improvement of commercial crops
- ✓ Research on insects, microbes, pollinators etc.

## 3. Strengthening Agricultural Education, Management and Social Sciences

To provide reliable advisory and other services to farmers, there is a need to increase the number of personnel who are competent in agriculture. Also, improving the research capabilities of researchers by providing various trainings, improving the lab infrastructure, and funding for research activities is required to meet the ever-dynamic needs of farmers by the agricultural scientific community. With an outlay of Rs. 2,291 crores, GOI is aspiring to upgrade the capabilities of stakeholders of the Indian Council of Agricultural Research. This scheme will also increase the percentage of agricultural GDP that is spent for research activities and agricultural education which is currently a dismal low of 0.6 to 0.7 per cent in comparison to 4.2 per cent in Israel and 2.1 per cent in China. Strengthening social sciences



in agriculture is also crucial as it forms the crucial link between farmers and the scientific community. Researchers in Agricultural Extension, Agricultural Economics and Agricultural Statistics will assess the needs of farmers, the extent of success of various schemes, assess vulnerabilities of farmers, distress among farmers etc. Also, the current extension worker-to-farmer ratio in India is very wide at around 1:1100 ratio, creating more burden and reducing effectiveness and efficiency. The above scheme also has the potential to reduce the widening gap between farmers to extension personnel.

#### **4. Sustainable livestock health and production**

As mentioned earlier the leading front India plays in the dairy sector globally, certain other metrics assure the importance of the dairy sector nationally too. In recent years, milk production has grown multi-fold times from 55.6 million tonnes during 1991-92 to 239.3 million tonnes during 2023-24. The livestock sector registered a compound annual growth rate of 7.38 per cent from 2014-15 to 2022-23 along with a significant increase in total gross

value added in agriculture from 24.32 to 30.38 during the same period. As the livestock sector is poised for further growth, the sector is even being considered as a sunrise sector for further investments. Accordingly, GOI is providing an impetus with an outlay of Rs. 1,702 crores in investments in the sector. The scheme focuses on

- ✓ Animal health management and veterinary education
- ✓ Dairy production and technology development
- ✓ Animal genetic resource management, production and improvement
- ✓ Animal nutrition and small ruminant production and development

#### **5. Sustainable development of Horticulture**

India is focusing on a shift from calorie-oriented food consumption to more nutrition-oriented food consumption. Horticulture has a pivotal role to play in achieving such nutritional objectives. Also, the horticulture sector can help the farmers in crop diversification and also increase their incomes as the government is heavily



promoting horticulture activities through various schemes. Increasing the production of fruits, vegetables, spices etc is very much necessary as they exert a strong impact on the consumer price index (CPI). Food and beverages weighing around 45 per cent under CPI is the component with the highest weightage, under which cereals, vegetables, fruits, spices, and processed foods contribute substantially. Therefore, any price changes in horticultural commodities have a huge effect on the pockets of consumers. Also, TOP commodities which comprise tomatoes, onions and potatoes have far-reaching effects as their prices fluctuate steeply. Covering all such aspects, an outlay of Rs. 1,129 crores has been allocated for the horticultural sector for various investments. It encompasses various crops such as tropical, sub-tropical, and temperate horticultural crops.

## **6. Strengthening of Krishi Vigyan Kendra (KVK)**

Krishi Vigyan Kendras since their inception in 1974 till now have been an integral part of our agricultural system acting as a farm science centre. As of December 2024, a total of 728 KVKs are present overall in India with total farmers registered for various activities at more than seven lakhs. With its presence all over the nation, KVKs have the potential to reach farmers and upgrade their capacities as relevant to their location and available resources. Each KVK will have its unique mandate, however, all these mandates will be working on Technology Assessment and Demonstration for its Application and Capacity Development (TADA-CD). Also, KVKs act as knowledge and resource centres which provide information on various new technologies that are developed under the National Agricultural Research System. With the advent of Artificial Intelligence, Machine Learning, Drone technology etc., there is a need to integrate such new advances in the service delivery by KVKs. With such an objective, an outlay of Rs. 1,202 crores has been allocated by the GOI for strengthening KVKs.

## **7. Natural Resource Management**

Though the Green Revolution is acclaimed for increased productivity and production, there is a lot of criticism in both scientific and general communities about the negative effects it had on natural resources such as soil, water, air etc. Earlier, improving production was the major motive of any schemes targeting the agricultural sector but currently, the emphasis drifted towards sustainability which anchors on 3 pillars, economic, environmental and social sustainability. Reducing the emissions of greenhouse gases (GHG) arising out of the agricultural sector is a global concern. In India, agriculture accounts for 18 per cent of the total GHG emissions. Agriculture thereby is both a catalyst of climate change and also inherently gets affected negatively by it. To limit climate change from exacerbating, natural resource management is the key. GOI has implemented various schemes in the past such as Soil Health Card, Pradhan Mantri Krishi Sinchai Yojana, Paramparagat Krishi Vikas Yojana etc., that promote sustainable agriculture. To further bolster the aspect of natural resource management, an outlay of 1,115 crores has been allocated under this new scheme.

# **CONCLUSION**

With a total outlay of Rs. 14,235 crores for all the seven schemes combined, GOI is ambitious to strengthen the agricultural sector altogether. All seven schemes are devised to address the contemporary challenges faced by agriculture. While the schemes have been approved by the government, they take effect in the coming days. To achieve all the objectives, effective implementation, monitoring and evaluation of the schemes is necessary. Overall, the schemes upon successful implementation will strengthen the agricultural sector and farming communities.