

VISION 2050



ICAR – Zonal Project Directorate, Zone II

Bhumi Vihar Complex, Block GB,

Sector III Salt Lake City

Kolkata 700097

The context

Agriculture is a critical sector of the Indian economy. Contribution to the overall GDP of the country has fallen from about 30 percent in 1990-91 to less than 15 percent in 2011-12. This is a trend that is expected in the development process of any economy, agriculture yet forms the backbone of development. The average size of operational holdings has diminished progressively from 2.28 ha in 1970-71 to 1.55 ha in 1990-91 to 1.23 ha in 2005-06. As per Agriculture Census 2005-06, the proportion of marginal holdings (area less than 1 ha) has increased from 61.6 percent in 1995-96 to 64.8 percent in 2005-06. Growth performance of agriculture sector has been fluctuating between plan periods. Hunger and malnutrition are going to pose serious challenge, where fisheries sector has a tremendous role to play in future.

Agricultural Extension in India

Indian agriculture embraces diverse actors in its endeavour to feed 1.21 billion people. The small, marginal and landless farmers are extremely vital for ensuring food security as the land holdings are shrinking day by day. The contribution of women farmers is also immense particularly in on farm operations, harvesting, post harvest management, savings and in other activities especially in horticulture and animal husbandry sectors. The ever increasing populations, climate change, changing dietary habits are continuously putting pressure on agricultural sector. Farmers tend to get interested in farming when they get profit and regular assured income. In today's scenario, innovation and technology form the key to address growing challenges in agriculture. Therefore, the innovations/technologies developed by scientists and farmers need to be identified, experimented and integrated. The innovation- development process consists of all the decisions, activities, and their impacts that occur starting from recognition of a need or problem, through research, development and its diffusion and adoption by users. There are many agencies which are working at the field level with various kinds of public-private-farmers linkages. Earlier, transfer of technology (TOT), top down approaches, and later on participatory approaches and processes were focused. Partnerships and interactions are now seen more important. Partnerships like public-private, multi-stakeholder partnership, etc. and collaborations like co-management, co-breeding, co-creation, co-development, etc. have emerged more prominently in the present day context.

Zonal Project Directorate Zone II

The Zonal Project Directorate (erstwhile Zonal Coordinating Unit), Zone-II was established in the year 1979 with the specific objective to monitor and evaluate the Lab to Land Programme of ICAR. Alongside, it was entrusted with the responsibility to monitor and guide the activities of KVKs which were being established as District Level First Line Agricultural Institutions. The initial operational jurisdiction of the Unit was spread over West Bengal, Orissa and A&N Islands. In 1991 Bihar was brought under the fold of Zone-II and Orissa was shifted to Zone VII. The unit was shifted to NBSS&LUP Campus, Kolkata in the year 1996. The jurisdiction of ZPD was further extended to include the newly created state of Jharkhand in the year 2000. The unit was upgraded to Zonal Project Directorate in 2009. The Directorate moved to its new administrative building in Salt Lake, Kolkata in 2013.

Function of ZPD: -

- To formulate, implement, guide, monitor and evaluate programmes organized by Krishi Vigyan Kendras.
- To coordinate with State/Central Government Agencies, Credit institutions and any other organization for successful implementation of KVK programmes.
- To serve as feedback centre from the extension projects to research and extension systems.
- To help in implementation of all projects assigned by ICAR.
- To maintain close coordination with ICAR headquarter particularly with Deputy Director General (Agricultural Extension) for preparation of all documents.
- To maintain liaison with ICAR and other relevant Institutes present over the zone and elsewhere as well as all Subject Matter Divisions at headquarters for bettering the overall functional proficiency of KVK system in the zone.

Manpower

Category	Cadre Strength	In Position	Vacancy
Scientist	6 +1 (RMP)	6+1	-
Technical	1	1	-
Administrative	8	6	2
Supporting	2	1	1
Total	18	15	3

Accomplishments of Zonal Project Directorate

a. Technologies showcased

Among the recent important activities, the Directorate was able to showcase some technologies having impact on farmers of this Zone.

- **Land shaping technology:** KVK South 24 Parganas (Nimpith) could demonstrate this technology in an extensively large scale for better resource utilization by the farmers.
- **Borabandi (check dam):** KVK Gumla had been able to evolve this low-cost water harvesting structure.
- **Low-cost storage structure:** KVK Hooghly gave an innovative low-cost structure for storing onions.
- Aerobic rice cultivation-
- Hybrid rice technology

- Crop diversification – Development of banana orchard
- Management of stress tolerant varieties for submergence
- Production technology for sunflower in saline soil
- Resource conservation technology in rice and wheat (Zero tillage)
- Progeny farm of sheep and goats
- Integrated farming system modules for various agro-ecological situations
- Promotion of sustainable livelihood for small and marginal farmers with a focus on women empowerment
- Brown manuring in paddy
- Upscaling of paddy variety of Gotra Bidhan-1
- Maize demonstration
- Organic farming
- Integrated farming system
- Large scale adoption of T x D breed of pig
- Extensive promotion of Vanraja and Grampriya breeds of poultry under backyard farming
- Entrepreneurship development through ornamental bird and fish farming
- Large scale demonstration of home- made low-cost livestock feed
- Promotion of coloured capsicum cultivation

b. Technologies assessed refined and demonstrated

- A total 7144 trainings on various fields of agriculture and allied sectors organized by KVKs of this zone for 227946 participants, comprising of 49736 (i.e., 22%) farm women and 68419 (i.e., 30%) SC/ ST farmers
- KVKs conducted 417 on-farm trials on integrated crop management (19%), varietal evaluation (13%), integrated nutrient management (13%) and integrated disease management (9%)
- Front-line demonstrations (13374) carried out by the KVKs included paddy (20%), oilseeds (20%), pulse (20%) and wheat (10%)
- Produced 4500 tonnes of seed of various crops
- A total of 12.97 lakh planting materials produced
- KVKs produced 11.57 lakh livestock and fingerlings etc.
- Entrepreneurs (6095) developed by KVKs through vocational training to rural youth

c. Collaboration and linkage

- Convergence meeting with ATMA at SAMETI, Narendrapur
- Coordinated Livelihood programme at Bali, Sundarbans
- Animal Disease Information System in collaboration with PD-ADMAS, Bangalore
- Nutrient management in Wheat in collaboration with IPNI
- Post Office-Farmer linkage
- Designated as the National Coordinator for NIFTD, a mission mode fodder technology demonstration project being implemented jointly with IGFRI.
- Sensitization Workshop organized jointly with PPV&FRA, New Delhi at Kalyani, West Bengal

d. Monitoring and evaluation

- Zonal Workshop for KVKs
- Mid Term Review Workshops held for KVKs
- Zonal Review Workshop of NICRA
- Zonal Monitoring Committee for reviewing NICRA
- Site Selection Committee for establishing new KVK
- Scientific Advisory Committee meetings at almost all KVKs

e. Special programmes

- **Maize Demonstration:** Maize demonstration was carried out by KVKs in an area of more than 500 ha in this zone involving 12 KVKs
- **Harnessing Pulse Productivity:** around 800 demonstrations on pulse covering around 100 ha area.
- **Cotton Demonstration:** Conducted cotton demonstration in around 1500 ha area
- **Demonstration on Farm Tools and Implements:** Around 20 KVKs of the Zone are involved in demonstration on farm tools & implements
- **Programmes with FOCT:** in Collaborating with Coconut Development Board, Ministry of Agriculture, Govt. of India to enable unemployed youths to undergo training programme at 11 KVKs of this Zone.
- **Kisan Chaupal :** All the KVKs are involved in Kisan Chaupal programme
- **NIFTD:** To augment fodder productivity NIFTD has been launched where Zone II is acting as a Nodal agency. 91 KVKs of the country have been involved. The identified KVKs have been trained in collaboration with IGFRI, Jhansi followed by development of technical programme as per the need of concerned KVK district.
- **PPVFR:** 10 KVKs (2 from A&N Islands and 8 from WB) have been involved in this programme. All the KVKs conducted awareness programme in the respective KVK district with the participation of large number of farmers followed by registration of more than 250 plant varieties in the KVKs.
- **NYK:** Arrangements were made with Ministry of Sports & Rural Affairs to provide livelihood development training programme to NYK volunteers through all the KVKs of Zone II
- **IPNI:** International Plant Nutrient Institute has been tied up with 25 KVKs of this Zone to carry out specific trial on plant nutrition in wheat and maize. The validation of nutrient management model will be done through the trials. The programme has just been initiated and the results of the trials are awaited.
- **PD_ADMAS:** In collaboration with PD_ADMAS, Bangalore and IVRI RS, Kolkata, 13 KVKs of WB have been entrusted to work on surveillance of animal diseases to report to PD_ADMAS, ICAR and ZPD II. The KVKs are the first organizations to report the incidence of any animal/poultry disease in the district to effectively execute preventive measures.
- **TSP:** 12 KVKs of the Zone operated TSP scheme to ensure direct benefit to individual or family belonging to ST
- **PDFSR:** Inter-institutional linkage between PDFSR, Modipuram and ZPD-II to develop and upscaling IFS model in collaboration with PDFSR. Initially, three KVKs – Dumka in

Jharkhand, Purnea in Bihar and South 24 Parganas in WB were identified to carry out initial activities alongwith the ECF stations functioning in the identified districts

- **Strategic Deworming of Livestock:** In collaboration with IVRI RS, Kolkata, 4 KVKs of WB are involved for taking strategic deworming for livestock.
- **FAI:** Trials and demonstration on fertilizer package/assessment in collaboration with FAI are undertaken in some KVKs of the zone.

KVK Status

Zonal Project Directorate monitors the activities of 83 KVKs as on date spread over in the states of Bihar, Jharkhand, West Bengal and Union Territory of A&N Islands.

State	No. of district	Details of KVK						Total
		SAU	NGO	ICAR	State Govt.	Deemed Univ.	CU	
Bihar	38	31	05	01	01	-	-	38
Jharkhand	24	16	05	03	-	-	-	24
West Bengal	18	11	03	01	01	01	01	18
A&N Islands	3	-	-	03	-	-	-	03
TOTAL	83	58	13	07	02	01	01	83

Challenges

Agriculture in the country today faces diverse challenges in terms of food security due to increasing population pressure, climate change, changing dietary habits and fast-changing social situations. Complexity of such challenges has been multiplied due to implementation of such Govt. schemes like MGNREGA, differential PDS, involving local institutions like Panchayets in resource inventory preparation as well as the incapability to make agricultural marketing an effective one. Due to this, agricultural labour shortage and enhanced rate of depletion in natural resource base have been envisaged to hinder the desired agricultural technology demonstration and dissemination in our country. To overcome such a situation, a clear cut vision on our part is needed to be outlined. Significant issues confronting agriculture today are - Declining land and water resources, Labour shortage, Agri-preneurship development, Stress agriculture etc.

Operating Environment

While addressing the issues mentioned in previous sections, the dynamic changes in the socio-economic, physical and institutional environment need to be duly taken care of. This eastern

zone of our country has been bestowed with tremendous water resources as well as threatened with vulnerable ecosystems like mountains, hills, coasts and plateau alongwith the existence of socio-cultural extremism. Most of the farmers of this Zone fall in the category of small and marginal facing with the characteristic resource-risk situation. Therefore, a typical Public-Private-Partnership (PPP) mode of action in the technology demonstration front needs to be explored in coming future if we really want to make a dent in this aspect. A few aspects that characterizes farming sector are - Small holders and family farming, Rural youth in agriculture, Gender mainstreaming etc.

1.0 New opportunities for 2050

- ✿ Knowledge led integrated agri-animal-fish farming practices
- ✿ Improved access to technologies
- ✿ Improve access to information through effective use of Information and Communication Technology in supply chain management
- ✿ Capacity strengthening through skill training
- ✿ Develop and pilot effective delivery systems and evolve institutional models to link research and development system with farmers and other stakeholders in the value-chain for accelerated adoption, cost-effective post-harvest management, value-addition and processing and efficient marketing through information and communication technology and e-extension
- ✿ Link research and development system with society by improving science communication. Awareness and sensitization programmes would be developed addressing benefits of science and food safety concerns of the society
- ✿ More far-reaching, participatory information and communication technology would be evolved by optimizing print and electronic delivery systems and by showcasing research products for effectively linking research accomplishments with the stakeholders

SWOT Analysis of ZPD

Strengths

- Committed people
- Strong network of KVKs (83)
- Multi-disciplinary team

Weaknesses

- Several layers of command (VC, DEE etc.)
- Poor involvement of state machinery
- Poor quantification of impact
- Weak coordination
- Poor research support to extension delivery system

Opportunities

- Private extension providers
- ICT led extension
- Convergence
- Consortia/ network mode of research

Threats

- Uncertainty of establishment
- Most of the scientists are PS

Goals/Target

ZPD upholds the FARMERFIRST concept and intends to make agriculture an attractive livelihood for the weaker section of the society. Specific goals are-

- Augmenting food productions
- Ensuring the availability of quality inputs
- Reducing gap between achievable and average yield
- Providing soil health card
- Empowerment (technological and economical) of women
- Bridging digital divide

Way Forward

Future extension strategies will increasingly become pluralistic and the following research and development frontiers may also add to the overall improvement of this sector.

- Pooling of available transferrable technologies available
- Content mobilization and development of knowledge capsule
- Assemblage of a technology module for its assessment , application and generating feedback
- Strengthening Extension
- Impact Assessment and documentation
- Research in technology application
