



Vision 2030 ZPDK



Zonal Project Directorate, Zone-IV

Kanpur

<http://zpdk.org.in>



Vision 2030 ZPDK

Zonal Project Directorate, Zone-IV

G.T. Road, Rawatpur, Kanpur 208 002

Printed: June, 2011

Published by : **Zonal Project Director**
Zonal Project Directorate, Zone-IV (ICAR)
G.T. Road, Rawatpur, Kanpur-208 002

Compilation : **A.K. Singh**
Lakhan Singh
C.Y. Manikanhaiya

Contents

<i>Foreword</i>
<i>Preface</i>
<i>Preamble</i>
Agricultural Scenario in Zone-IV
Network of KVKs
ZPDK Vision 2030
Harnessing Technologies
Strategy and Framework
Epilogue

Forword



ICAR has created a network of KVKs across the country. ZPDK is entrusted with responsibility of two states (Uttar Pradesh and Uttarakhand) which are endowed with varying agro-climatic conditions (10) and rainfall pattern (650-2000 mm). The distinct variations like drylands of Bundelkhand to productive Indo-Gangetic tract to hills of Uttarakhand pose multiple challenges and offer encouraging options for sustainable agricultural development in these two states. The KVKs are the face of ICAR and provide a unique platform at district level for interface with different stakeholders. The Council is determined to enhance farmers-scientists contact and pursue the agricultural innovation systems utilizing the farm innovators, progressive farmers and farmers' organizations for technology application and feedback to NARS. Greater potential lies in building capacity of KVKs as an institution for providing technology, skill, diagnostic and advisory to different clientele groups for economic sustenance.

I am confident that ZPDK along-with strong group of KVKs and a network of NARS institutions would bring in substantial change in providing services to the farmers and agricultural knowledge management in the zone.

(S. Ayyappan)
Secretary, DARE & DG, ICAR

Date: 25th June, 2011
New Delhi

Preface

The ZPDK with its genesis in 1979, has gained substantial support, guidance and empowerment from ICAR in recent past envisaging and building an environment technology uptake pathways based on innovations, knowledge, partnerships and convergence with the focus on farm and farmers. The KVK has become global product and its responses to growing challenges, has created an environment of confidence to built all the technology orient agri-rural development programmes around it in a district.

The KVK has been functioning on annual and five yearly visioning. The preparation of Vision 2030, is first attempt of its kind eying on creating agricultural knowledge management system inheriting structures of partnerships, knowledge sharing, confidence building, farmers first, etc.

I would express my gratitude to Hon'ble Secretary, Department of Agricultural Research & Education and Director General, Indian Council of Agricultural Research, Dr. S. Ayyappan for his sustained interest and everlasting zeal to support KVK system and guiding in preparation in of this vision document. I wish to pay gratitude to Dr. K.D. Kokate for taking the agricultural extension system to a greater height. I appreciate the effort of my colloquies Dr. Lakhani Singh, Sh. C. Y. Manikhanhaiya and Dr Atar Singh in preparing this document.

(A K Singh)
Zonal Project Director

Agricultural Scenario in Zone-IV

Just after Independence in 1947, the first Prime Minister of India Shri Jawaharlal Nehru had remarked: "Everything else can wait, but not agriculture" in the context of the Bengal Famine of 1942-43 and the resultant acute food scarcity. This remark is even more meaningful in the context of ever increasing population and emerging challenges before agricultural sector and farmers. Uttar Pradesh and Uttarakhand with 21 crore population, share 17.5% of the total country population (Census, 2011). Only five countries (China, USA, Indonesia & Brazil) has higher population than Uttar Pradesh. Feeding this large population is a herculean task where farming looks less attractive to new generation. Uttar Pradesh contributes significantly to national basket being first in wheat, sugarcane, lentil and potato; second in rapeseed and mustard; third in rice, pigeon pea; fourth in total pulses; sixth in maize production.

Agro-climatic conditions in the Zone

This zone on the basis of rainfall, terrain and soils has been divided into ten agro-climatic zones viz., Central Plain, South Western Semi Arid, Bundelkhand, Eastern Plain, North Eastern Plain, Vindhyan, Bhabhar & Tarai, Western Plain, Mid Western Plain and Hill zones.

The zone has huge diversity within 10 agro-climatic zones characterized by drylands of Bundelkhand with annual rainfall of about 650 mm to 1400 mm annual rainfall in north eastern parts of the Uttar Pradesh and more than 2000 mm rainfall in hills. Temperature varies from level of freezing to 47.8°C in Bundelkhand zone. The cropping intensity varies from 111% (Bundelkhand region) to 157% (Western region). Major limitations of different agro-climatic zones are sodic soils in Central Plain; brackish water, alkalinity & undulating ravines in South Western Semi Arid; rainfed situation in Bundelkhand; flood prone area in North Eastern Plain; saline & alkaline soils and diara lands in Eastern Plain; undulating and rocky area in Vindhyan zone; salinity & alkalinity, waterlogging in Western Region; problem of drainage in Bhabhar & Tarai zone and difficult terrain prone serious losses to productive soils in Hills, create hindrance in agricultural development.

Crop Coverage and Productivity

Uttar Pradesh

A variety of crops viz. cereals, pulses, oilseeds, sugarcane, fruits, vegetables and spices are grown in different agro-climatic zones of Uttar Pradesh. Among food grains, oilseeds, sugarcane, fruits, vegetables and fodder crops, the major share of area goes to food grains i.e. around 80 per cent and other commodities accommodate within the rest 20 per cent. The zone-wise analysis reveals that each zone possesses strength for one or another crop in relation to agro-eco situation of the zone. Six out of nine zones possess better irrigation facilities and soil fertility status where rice-wheat, rice-sugarcane cropping systems are most popular and these zones mainly contribute to rice, wheat and sugarcane production. Three zones viz, South-Western Semi-Arid Zone, Bundelkhand and Vindhyan zones possess relatively low irrigation facilities and soils are also average to medium in fertility and contribute major share of pulses and oilseeds production in the state.



Uttar Pradesh is first in production of wheat (335), sugarcane (35.81%), lentil (45.68%) and potato; second in rapeseed and mustard (17.15%); third in rice, pigeon pea (10.71%); fourth in total pulses (10.7%); sixth in maize.

Among kharif food grain crops, rice is a major crop and alone it shares 69.0 per cent of area under food grains and contributes around 78.0 per cent to the food grains production. Uttar Pradesh is third highest producer of rice with around 11.9% share to the country's production but the productivity of 18.79 q/ha is far below than West Bengal (25.93 q/ha) and Andhra Pradesh (29.84 q/ha). In case of pulses, urdbean and mungbean together share 5.10 per cent area but contribute only 1.26 per cent to the food grains production. Groundnut and linseed are major legume,

oilseed crops and share of these two crops in total cropped area is 2.62 per cent. Further analysis reveals that in case of rice, out of 9 zones, only 3 zones i.e. Mid Plain, North Eastern Plain and Eastern Plain zones share around 66.0 per cent of the total acreage. Three zones, Bhabhar and Tarai, Western Plain and Mid Western Plain possess average yield around 23.0 q/ha and other zones have yield around 20.0 q/ha. In case of maize, the Central Plain zone shares the maximum acreage (30.0%) followed by the South-Western Semi-Arid and the North Eastern Plain Zone with 17.0 and 16.0%, respectively. The Central Plain and the Bundelkhand zones together share more than 80 per cent acreage under sorghum in the state. However, the productivity of the state is low (10.04 q/ha). The South-Western Semi-Arid zone alone shares more than 50.0 per cent acreage of pearl millet. Its maximum productivity is recorded in North Eastern Plain zone (18.2 q/ha) with state average yield of 14.76 q/ha.

Wheat is a major crop of Uttar Pradesh is contributes 33 % of total production of the country and alone it shares 78.0 per cent of area under food grains and contributes around 90.0 per cent of the production in the state. The agro climatic zone-wise analysis reveals that in case of wheat, out of 9 zones only 4 zones of Uttar Pradesh, Mid Western Plain, South-Western Semi-Arid, Central Plain and Eastern Plain share 62.0 per cent of the total acreage. With an average yield of 37.10 q/ha, the Western Plain zone possesses the maximum productivity among the zones. The three other zones, Bhabhar & Tarai, Mid Western Plain and South Western Semi Arid possess higher productivity than that of the state's productivity of 27.72 q/ha, however, rest of the five zones have lower productivity and Vindhyan zone being at the bottom with an average yield of 19.5 q/ha. The productivity of wheat in the states of Uttar Pradesh (27.21 q/ha) and Uttarakhand (20.49 q/ha) are far below the states like Punjab and Haryana producing more than 42 q/ha.

In case of pulses, urdbean and mungbean are major crops of kharif season and chickpea, lentil, pigeonpea and fieldpea are the major crops of Rabi season. Among pulses, chickpea is the most important crop with its share of 31.4 per cent in the total area under pulses in the state followed by lentil (24.2%), urdbean/mungbean (16.4%) and pigeonpea and fieldpea each with

a share of 14.0 per cent. The agro-climatic zone-wise analysis reveals that Bundelkhand zone alone shares maximum acreage under major pulses (44.5%) followed by Central Plain zone (20.5%). These two zones together share 65.0 per cent acreage under pulses in the state. The North Eastern Plain and Eastern Plain zones also share considerable acreage under pigeon pea. The productivity of urdbean (5.76 q/ha) and mungbean (3.87 q/ha) is very low. The productivity of pulses like chickpea (7.36 q/ha), pigeon pea (7.36 q/ha), lentil (7.2 q/ha), pea (9.8 q/ha) is far below the potential of various regions.

In case of oilseeds, groundnut and sesame are major crops grown in Kharif and rapeseed and mustard are the major crops of rabi, linseed is also grown in small area. The rapeseed and mustard have major share (66.0%) in acreage under oilseeds grown in the state.

Looking to the share of different agro-climatic zones in acreage under different oilseed crops, it was observed that Central Plain and Bundelkhand zones share major area under the groundnut and sesame. Similarly, South-Western Semi-Arid and Central Plain zones together share major area under rapeseed and mustard (62.0%). Regarding average yield of oilseeds in different zones, it was observed that the Central Plain and Bundelkhand zones possess the highest acreage, yet their average yields in case of groundnut are one of the lowest. In case of Rapeseed and Mustard, the South-Western Semi-Arid zone possesses the highest average yield among the zones.

The Bhabhar & Tarai and Western Plain zones together share more than 50.00 per cent of the acreage under sugarcane in the state. The other important sugarcane growing zones are Mid Western Plain and Mid Plain with a share of 28.50 and 14.00 per cent, respectively. There is considerable acreage under sugarcane in North Eastern Plain and Eastern Plain zones and these two zones together also share 17.6 per cent acreage. The rest of the zones have considerably small area under sugarcane. Regarding productivity, Central Plain zone has recorded an average maximum yield of 640 q/ha against the state's productivity of 573.0 q/ha.

The Central Plain zone alone shares 35.0 per cent area under potato in the state followed by the South-Western Semi Arid (21.0%) and Eastern Plain zone (18.0%). Regarding productivity with 273.0 q/ha of average yield, the South-Western Semi Arid zone possesses the highest productivity among the zones, and with 184.5 q/ha of average yield, North Eastern Plain zone has the lowest yield.

Uttarakhand

The conservation of natural resources in the Himalayan region is an issue of utmost concern for sustainable agricultural development and improving livelihood securities of the local inhabitants. Ruthless and unauthorized exploitation of natural resources is affecting long-term sustainability. A large number of crops like cereals, pulses, oilseeds and others (apple, almond, walnut, plum, peach, cherry and apricots), vegetables (brinjal, chillies, potato, pea, cabbage, cauliflower, ginger, knoll- khol, turnips, garlic etc.). Forests occupy 60% of the total geographical area of the Himalayan ecosystem, though substantial area has been reduced to scrub forests. The agrarian economy of the hill is heavily dependent on forest and pasture land for energy supply fodder, non-timber products and livestock rearing. This vital sector of hill economy, however, due to high biotic pressures and biotic factors is degrading. There had been a gradual decrease in the dense forest areas. Massive corrective measures are therefore being taken by government at strategic, operational and policy level. Cultivable lands are limited, little scope of cultivating fodder as a result livestock pressure is relatively higher in the Himalayan than in the plains. Cold-water aquaculture has a vast potential for horizontal and vertical expansion. Subsistence agriculture is the prime source of livelihood and employment of more than seventy per cent of the population in Uttarakhand. It accounts for about thirty seven per cent of the Net Domestic product of the state. Agriculture in Uttarakhand is very complex and is interlinked with crop husbandry. Inaccessibility, environmental heterogeneity and ecological fragility have favored evolution of subsistence production system in the hill state. Presently about twelve per cent of the geographic area is under cultivation in the state. Tarai, Bhabhar and low lying valley upto 1000m (Zone A) have hot and humid climate and supports crops like paddy, wheat, pulses,

soybean, maize, litchi, mango and vegetables, etc. The subtropical zone lies in between the altitude of 1000m to 1500 m and is capable of growing a diverse range of crops including horticulture crops. The area lying in the altitude of 1500m to 2400m is classified as temperate region, and hence support a large number of temperate fruit cultivation, floriculture as well as medicinal plants. The region above the altitude of 2400m is further classified as sub-alpine as well as alpine zones. This region is not fit from agriculture point of view. It has pasturelands and is store house of medicinal herbs. The diverse agro climatic condition of the state gives it a unique advantage as well as a competitive edge over other states in production of vegetables (off season vegetables in context of plains) that fetch high value in the market.

The region has forest cover of 65%, of which large part is thin on vegetative cover. 12% land area is cultivated and 37% cultivated is irrigated but the average rainfall is much high 1675 mm broadly the state represent four agro-ecological situations. The major crops of Hills of Utrakhand include paddy, wheat, maize, soybean, and other pulses. The cropping intensity in Uttarakhand is 159.7.

Research and Extension Centers

Four SAUs, Kanpur, Faizabad, Meerut & Pantnagar and one Deemed Agriculture University, Allahabad shoulder the responsibility of all round development of agricultural research and cater to the technological requirements of different agro-climatic zones of the state. Besides, these Universities, the Veterinary University at Mathura are mandated to support animal husbandry research, exclusively. The zone is fortunate to have 23 ICAR and 5 CSIR institutes working in different sectors of agriculture. Institute of Agriculture Sciences, BHU, Varanasi is also engaged in agricultural research and eastern UP is main beneficiary of its output. These institutes generate appropriate technologies in their respective areas. The line departments of the zone viz agriculture, horticulture, animal husbandry, fisheries, sericulture and other allied departments of the State Government bear major responsibility of extension of proven technologies to the farmers.

Challenges and opportunities

Present day agriculture sector is facing challenges from natural resource deterioration, climate variability, shrinking biodiversity base, adverse changes in quality and quantity of water, deterioration in soil health, etc. In the globalised era, fluctuations of prices of agricultural commodities are posing serious threats on the profitability of the agricultural produce. The Indo-Gangetic Plain is dominated with rice-wheat cropping system which needs to be diversified and intensified. The tract having abundance of ground water and most fertile soil is an opportunity in this region. The Bundelkhand region is having less rainfall, high temperature, undulating topography, residual and low depth of soil, etc. which adversely affect the agriculture in this region. But this rainfed area having huge potential to become pulses and oilseeds bowl of the country.

In the hilly tracts of Uttarakhand soil erosion, sloppy land, rainfed agriculture, use of low external inputs, etc. are the major problems. But in the hills, there is vast possibility of improving agriculture by adopting integrated watershed management, offseason vegetable cultivation, protected cultivation, post harvest and value addition, floriculture and fruits cultivation, organic agriculture, etc.

Network of KVKs

The Education Commission (1964-66) recommended to establish specialised institutions to provide vocational education in agriculture and allied fields to cater to the training needs of a large number of boys and girls coming from rural areas. The ICAR standing committee on Agricultural Education, in its meeting held in August, 1973, asked to constitute a committee in 1973 headed by Dr. Mohan Sinha Mehta of Seva Mandir, Udaipur (Rajasthan), for working out a detailed plan for implementing Krishi Vigyan Kendras'(KVK). Consequently the first KVK was established in 1974 at Pudducherry (Pondicherry) under the administrative control of the Tamil Nadu Agricultural University, Coimbatore. The journeys of KVKs have been remarkable enabling its existence in 591 districts by June 2011. By end of XI plan, establishment of 667 KVKs is envisaged.

Zone IV has a network of 80 KVKs (67 in Uttar Pradesh and 13 in Uttarakhand) under the administrative control of 6 State Agricultural Universities (61 KVKs), one CAU (1 KVK), 4 ICAR institutions (7 KVKs), 8 Non Government Organizations (9 KVKs) and one educational institution (2 KVKs). There are ---- ICAR institutions in Uttar Pradesh and ___ in Uttarakhand to provide technological support to KVKs.

As the KVKs continued to gain strength and spread, its mandate also got broadened with time. From vocational training in 1974, focus shifted to on-farm testing during 1990s; to technology assessment and refinement in 2000 and as knowledge and resource centre in 2009.

KVK Mandate

Assessment, refinement & demonstration of technology/products

KVK Activities

- On-farm testing to identify the location specificity of agricultural technologies under various farming systems
- Organize Frontline Demonstrations to establish production potential of technologies on the farmers' fields

- Training of farmers to update their knowledge and skills in modern agricultural technologies
- Training of extension personnel to orient them in the frontier areas of technology development
- To work as resource and knowledge centre of agricultural technology for supporting initiatives of public, private and voluntary sector for improving the agricultural economy of the district

The contribution of KVKs have been enormous in terms of educating farmers, farm women and rural youth and at the same time ensuring access to latest technological development taking place around the world. The achievements during last three years tell the story itself.

Of late, the roles of KVKs have become more challenging. The era of linkages, partnerships and convergence, demands a new sense of visioning, approach and commitment to respond to the changing environment. Different models of linkages with ATMA, RKVY, NFSM, NHM, MNREGA etc. have emerged over time. The role of small institution with seven experts and limited resources need to be cautiously devised. The contribution of KVKs in supporting ATMA initiatives have been quite significant in the areas of formulating SREP, CDAP and imparting HRD programmes for farmers and extension functionaries.

Despite all these successes, there are areas of improvement. The experiences indicate that KVKs have made dent wherever there is ownership by the host organization. The system is globally acclaimed as it provides knowledge sharing opportunities to large section of rural people who are deprived of modern technological developments.

Agricultural knowledge management is gaining centre stage of agricultural extension system to tap the potential of information revolution. The data generated need to be adequately processed and shared among different stakeholders. The role of KVKs is going to be toughest on this front.

ZPDK Vision 2030

Zonal Project Directorate, Kanpur has the genesis of 1979 when it was established as Zonal Coordination Unit with a mandate to monitor Transfer of Technology Projects. With the merger of on going projects like National Demonstration, Lab to Land, SC & BC into KVKs in 1992, the major functioning of the unit were broadened as planning, monitoring & reviewing the functioning of KVKs and other technology dissemination initiatives of the Indian Council of Agricultural Research. The Zonal Coordination Unit was upgraded as Zonal Project Directorate in March, 2009. Presently, this Directorate is engaged in planning, monitoring, reviewing and supporting ICAR initiated technology dissemination projects including Krishi Vigyan Kendras in Uttar Pradesh and Uttarakhand.

Functions

- Planning, monitoring and reviewing of KVK activities in the Zone.
- To identify, prioritise and implement various activities related to technology integration and dissemination.
- Coordinating with SAUs, ICAR institutes/organisations, line departments and voluntary organizations in the zone for implementation of KVK mandates and activities.
- Facilitating support to KVKs for efficient and effective functioning

KVK Mandate

Assessment, refinement & demonstration of technology/products

KVK Activities

- On-farm testing to identify the location specificity of agricultural technologies under various farming systems
- Organize Frontline Demonstrations to establish production potential of technologies on the farmers' fields
- Training of farmers to update their knowledge and skills in modern agricultural technologies
- Training of extension personnel to orient them in the frontier areas of technology development

- To work as resource and knowledge centre of agricultural technology for supporting initiatives of public, private and voluntary sector for improving the agricultural economy of the district

ZPDK 2030

ICAR has established a network of 591 KVKs across the country distributed in eight zones. Zonal Project Directorate, Kanpur is engaged in planning, monitoring, reviewing and evaluating the ICAR sponsored transfer of technology projects implemented through Krishi Vigyan Kendras located in Uttar Pradesh and Uttarakhand. The efforts of the Directorate is to address the challenges and issues related to agriculture and allied sectors through organizing different activities by KVKs.

Vision

To build an efficient system of agricultural knowledge and technology management to drive redressal of farming situation based assessment, application and advisory.

Mission

Serving farmers with modern science and technology for sustained agri- rural development.

Focus

To accomplish the vision and the mission of the ZPDK assigning highest priority to farmers especially small land holders will be nucleus of its entire programme. It will continuously strive to raise socio-economic status of farmers through transforming agricultural practices. It would concentrate on the following key areas:

- Build on farm innovations and improve farmers' capability through KVKs.
- Delivering intuitional mechanism for attaining food, nutrition and income security through community mobilization.
- To build capacity and preparedness for climate related challenges by promoting indigenous knowledge and practices coupled with modern scientific knowledge.

- Building capacity of KVK to act as knowledge and resource centre for the benefit of farmers.
- Promote environment friendly technologies, increasing seed replacement rate, use of bio-fertilizers and bio-pesticides for sustainable agriculture.
- Promote linkages, convergence and collaboration with public and private, national and international organizations for the benefit of farming community.
- Promotion and integration of secondary agriculture such as mushroom cultivation, protected cultivation, off-season vegetable for increasing the economic profitability of farmers.
- Focus on rainfed agriculture, degraded land, problematic soils for enhancing income and food production.
- Bringing diversification in farming through focused programmes on horticulture, dairy, feed & fodder, breed improvements in livestock, goatry, poultry and fisheries.
- Promote market oriented extension for backward and forward linkages keeping income security of the farmers in mind.
- Focus on entrepreneurship development among rural youths for self employment.
- Empowerment of women through well designed employment oriented trainings and promoting gender sensitive technologies.

Harnessing Technologies

Indian agriculture has registered phenomenal growth during last four decades with manifold increase in production of major commodities like food grains, vegetables, fruits, milk, eggs and fish. As a result, the per capita availability of important food items has increased despite of increasing population. The ratio of agricultural land to agricultural population has shrunk to 0.3 ha per person in India as compared to 11.0 ha per person in developed countries. The resources are getting marginalized and there is tremendous pressure on natural resources with divergence of agricultural land and water towards industrial, urban and non-agriculture sector. Food security is one of the major concerns with ever-growing population reaching 121 crore in 2011. Food security is attached to national sovereignty and thus, agriculture sector has to gain strength and vision to uphold the national concern. Empowerment of farmers is the key to achieve the food security.

Managing Resources

The Zone is endowed with plenty of rainfall ranging from 600 to 2000 mm and large tract of productive Indo Gangetic Plains. The conservation of available resource base i.e. land, water and vegetation is of prime concern which requires awareness and education programmes for masses and the farmers. Efficient rainfed farming systems supported with water harvesting and micro irrigation system may address the plight of Bundelkhand region. There is abundance of flora and fauna in hills whose conservation may provide huge dividends. Protective cultivation and integrated farming systems are drivers to success in hills.



Hill agriculture of Uttarakhand is mainly in the hands of women. The availability of women friendly farm machines and tools for agriculture and household needs will transform the scenario. Uttar



Pradesh with varied agro climatic situations offers opportunities for application of location specific farm tools. Resource conservation technologies have shown initial impact which has to be carried forward.

Knowledge and skill enhancement is necessary for farmers and extension functionaries towards modern farm and livestock related technologies. Well designed training and skill development programmes related to agriculture and allied sectors will be taken up.

Intensification and Diversification

Traditionally, agriculture in this zone is monopolized by rice-wheat cropping system. The productivity gains have not been at par with similarly endowed states and imbalances in soil fertility & productivity are emerging. Diversification will promote better natural resource management as well as enhanced food & nutritional security and income of the farmer. Diversification of agriculture would be focused through integration of different alternative crops, varieties and technologies for enhancing income and productivity per unit area by technology demonstration and application.



The potential of eastern Uttar Pradesh with plenty of water is still to be harnessed. It has potential to contribute to second green revolution. Addressing plight of Bundelkhand farmers largely depends on managing natural and social capital. The hills of Uttarakhand are still to be traversed for agro-eco tourism, floriculture, medicinal & aromatic plants and organic agriculture. The entire Indo Gangetic plains of Uttar Pradesh and foothills of Uttarakhand need diversification in rice-wheat and sugarcane

based cropping system. Productivity enhancement of major commodities can be easily attained by building technological & input support system.

Buffalo has become the main source of milk production in the zone. There is tremendous scope to raise the milk productivity of buffaloes and to spread the crossbred cattle. Goat can support the marginal, landless and poor rural households where as backyard poultry, fisheries have huge potential.

Post Harvest Management and Value Addition

Various studies show that in India about 18-25% losses occur due to inefficient post harvest management of the various agricultural commodities. These losses not only strain the food security of the country but also pinch adversely to the economic profitability of the farmers. To reduce the losses and create opportunities for value addition, low cost post harvest management practices, utilizing marketing network, food processing, organizing small and marginal farmers and knowledge & skill enhancement through well designed training programmes are viable options.

Linkages, Convergence and Partnership

Stronger bond with line departments, ICAR institutions, SAUs and NGOs need strengthening to support technology transfer and also to avoid duplication of efforts and utilization of expertise, recourses and experiences. The convergence of different components of various programmes and schemes of state and central government at the KVK level will help the farmer to harvest maximum benefits of these schemes.

Agri-preneurship

Entrepreneurship development is the need of today for creating self employment and ensuring livelihood security. Rural youths will be promoted to become agri-preneurs and to take training from specialized institutions for starting their enterprises. The use of KVK expertise in the identification and development of locally available agricultural resources for the development of enterprise by the rural youth will be vital in this direction. The technical and

motivational training, linkages, support and follow up by the KVK will ensure in the establishment of entrepreneurial activities by the rural youths.

Enriching Farmers

The concept of *Farmer First* will be pursued, aimed at evolving household specific modules with multiple roles of the farmers and other stakeholders in enhancing production, productivity, income and equitability.

There is growing realization that the existing extension system need to do a lot to respond to the emerging demand of the farmers. Also many times, research system is not getting adequate feedback to plan and conduct demand driven research thereby, a huge gap exists in the quality of research output required at the farm level and that being developed. In this context, the concept of *Farmer First* may be pursued with basic components: Massive Farmers-Scientist Contact for enabling involvement of researchers in the extension education programmes, for continuous interaction with farm conditions, problem orientation and quick dissemination & exchange of knowhow between farmers, scientists and other stakeholders; Application of Technologies involving different socio-economic groups in different agro-eco systems following the process of participatory technology development and innovation systems based on feedback; Socio-Economic Interventions for creating database, impact analysis, institutional development and developing studies on perception, attitude, yield gap, constraints.

Content availability and its intelligent organization continue to be serious challenges in Indian agriculture. This prevents offer of meaningful and efficient advisory and allied services to farmers and other stakeholders. It will be pursued to infuse semantic and social networking technologies into agriculture information management.

Strategy and Framework

The following strategy would be adopted to accomplish the vision and the goals of the Zonal Project Directorate to enhance the crop productivity, income and human capacity through KVK system.

▪ Facilitate adoption of appropriate location specific and economically viable technologies

- Pursuance of cluster approach to showcase of model of technology adoption related to agriculture, livestock and allied sectors
- Frontier technologies like resource conservations, water harvesting and micro irrigation, protected cultivation, secondary agriculture, etc. to be taken up with farmers participation.
- Approach of community focused technology and process application
- Focus on farm and location specific integrated farming system
- Intensification and diversification of existing farming systems through potential cultivars including hybrids, animal breeds, enhanced cropping intensity, alteration of crop livestock combinations, etc.



▪ Promotion of agri-preneurship

- Motivational training to rural youths
- Identification of agri-enterprises
- Marketing Survey
- Formulation of project proposal and linkages with different stakeholders
- Follow up and support

▪ **Farmer-Researcher Interface Continuum**

- Enhanced farmer scientist interfaces to build confidence for knowledge sharing
- Create a feedback mechanism for research system for promotion and evaluation of research outputs
- Offering on site solution to farmers' problems by scientists
- Organization of theme based farmers- scientists interaction
- Identify and build on farm innovations developed by innovator farmers.
- Boost to socio-economic research to reveal perceptions, attitudes, adoption, constraints, etc, related to farm technology.

▪ **Creating quality human and social capital**

- Enhancing knowledge and skills of farmers, rural youths and farm women on latest agricultural practices along with orientation to the extension workers
- Creation of institutional mechanism like Self Help Groups, Farmers Organizations, farmers interest groups for farmer to farmer extension as viable means to reach and convince large clientele.



▪ **Accelerated technology dissemination and agriculture knowledge management system**

- Developing KVK as a hub and platform of agricultural knowledge in the district
- Creation and development of new focus area, content, streams, user groups and partnerships opportunities around major activities: extension content mobilization, capacity building, social network development, impact monitoring, extension 3.0 and knowledge models

Epilogue
