

Krishi Vigyan Kendras

Glorious Journey of Five Decades

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This article offers an insightful exploration into the evolution and transformative impact of Krishi Vigyan Kendras (KVKs) over the past fifty years. The article delves into the pivotal role of KVKs as frontline extension systems in India's agricultural landscape. It traces the inception of KVKs in 1974 and highlights their remarkable growth, with 731 KVKs currently operating across the country. The article outlines the diverse mandates of KVKs, from training and frontline demonstrations to technology assessment and capacity development, reflecting their evolution into comprehensive agricultural knowledge and resource centres. Through an analysis of significant achievements, including the adoption of innovative initiatives like Cluster Frontline Demonstrations and District Agriculture Contingency Plans, the article emphasizes the substantial impact of KVKs on enhancing agricultural productivity, sustainability, and farmers' livelihoods. Furthermore, the article highlights the challenges faced by KVKs, including workforce constraints and administrative issues, calling for concerted efforts to address these challenges and strengthen the capacity of KVKs. In conclusion, the article asserts the pivotal role of KVKs in driving inclusive and resilient agricultural development and underscores the need for sustained support and innovation to ensure their continued success in the future.

Keywords: Achievement, Agricultural Knowledge, Centre, Extension, KVK, Schemes

KRISHI Vigyan Kendras (KVKs) - Agricultural Science Centres, have played a pivotal role as frontline extension systems in India's agricultural landscape. These district-level institutions have been instrumental in shaping the trajectory of Indian agriculture, driving innovation, and empowering farmers with scientific knowledge and techniques. Their journey began with the establishment of the first KVK in Puducherry (formerly Pondicherry) on March 21, 1974 by the Indian Council of Agricultural Research (ICAR) following Dr Mohan Singh Mehta Committee Report recommendations. Since then, KVKs have played a pivotal role in transforming agricultural practices and fostering innovation across

the country. The Planning Commission, keeping in view the demand of people from various corners to establish more KVKs in the country had approved scheme of ICAR to establish 44 new KVKs during the Sixth Plan. Further, the National Commission on Agriculture (1976) in its report on 'Research, Education and Extension'

recommended that there should be a plan for each district to have one KVK and ultimately to have three for each district.

India currently boasts a robust network of 731 KVKs operating across the country, with one KVK in 545 districts and two KVKs in 93 districts. This extensive network ensures widespread coverage and accessibility, enabling KVKs to effectively serve the farming communities



Cultivation of high value crops in protected condition



Cultivation of saplings, Belagavi



Distribution of saplings, Belagavi

in diverse regions across India. These KVKs, nurtured by ICAR (under the guidance of Agricultural Extension Division), operate under the administrative control of Agricultural Universities (509 KVKs), ICAR Institutes (66 KVKs), Non-Government Organizations (101 KVKs), State Governments (38 KVKs), Central Universities (3 KVKs), Deemed Universities (7 KVKs), Public Sector Undertakings (2 KVKs), and other Educational Institutions (5 KVKs). At zonal level, Agricultural Technology Application Research Institutes (ATARIs) play the role of coordination and monitoring with headquarters at Ludhiana, Jodhpur, Kanpur, Patna, Kolkata, Guwahati, Barapani, Pune, Jabalpur, Hyderabad and Bengaluru.

Transformation of KVKs

The recommendations of several committees and 12 National Conferences of KVKs during last five decades suggested for strengthening of KVKs to meet the changing needs of the Indian farmers. In this period, the KVK has been transformed from mere a training institution to Single Window Agricultural Knowledge, Resource and Capacity Development Centre. Initially, the sole mandate of KVK was to impart training to farmers/farm women/rural youth and extension personnel to enhance their knowledge and skill in the frontier areas of agriculture. During the course of implementation of the KVK scheme, it was realized that training only would not be useful unless it is followed up with frontline demonstrations in farmers' fields in order to demonstrate the production potential of agricultural technologies. Accordingly, frontline demonstration on important crops of the district was added to the mandate of the KVK. Later on, during VIII Five-Year Plan, the mandate of KVK was further reviewed and On-Farm Testing for identifying technologies in terms of location specific land use systems was added to the mandate of the KVK. Further during XI Plan, the mandate of working as resource and knowledge centre of agricultural technologies for supporting initiatives of public, private and voluntary sectors for improving the agricultural economy of the district was also included as activity of the KVK. The mandate of KVKs was technology assessment, refinement and demonstration of technologies/ products in XII Plan and technology

assessment and demonstration for its application and capacity development in XIII plan. Now, the proposed mandate of KVK is Single Window Agricultural Knowledge, Resource and Capacity Development Centre.

Significant achievements

The KVKs have played a crucial role in empowering the farmers and proved their worth in addressing the needs of the stakeholders by showcasing the frontier technologies, capacity development of stakeholders, front runner in technology application, making available technological information and inputs, practicing participatory approaches in planning, implementing, executing and evaluation, pursuing assessment and refinement of technologies to suit different agro-climatic conditions.

Over the past five years, numerous farmers affiliated with KVKs have been honoured by the Government of India with Padma Shri Awards and Genome Saviour Award among others, acknowledging their exceptional contributions to agriculture. This recognition underscores the pivotal role played by KVKs in motivating agricultural talent and fostering innovation within farming communities.

The Indian agricultural landscape has witnessed significant transformations through various initiatives taken by KVK aimed at enhancing productivity, ensuring sustainability, and improving farmers' livelihoods. Among these initiatives, the Cluster Frontline Demonstration (CFLD) program has played a crucial role in bolstering pulses production, elevating it from an average of 17.70 MT to 27.80 MT in 2022-23. Concurrently, efforts focused on doubling farmers' income through farm-based interventions have yielded promising results, with 75,000 cases documented and analysed. Furthermore, the implementation of District Agriculture Contingency Plans across 623 districts has provided a comprehensive framework for managing weather aberrations, offering vital support to both line departments and the farming community. Additionally, Crop Residue Management (CRM) initiatives in 60 districts of four states have led to a remarkable 52% reduction in crop residue burning

incidents, contributing significantly to environmental sustainability. Moreover, the scaling of Integrated Farming Systems (IFS) models across 26 States/UTs, including 31 bankable IFS for 22 States, has not only increased household net income by 39% but also improved dietary diversity scores by 8.57%. These achievements underscore the concerted efforts towards holistic agricultural development and underline the commitment to improving the lives of farmers while fostering environmental stewardship.

The third-party evaluation conducted by NITI Aayog Institute - National Institute of Labour Economics Research and Development (2018) sheds light on the significant impact and operational dynamics of KVKs across India. On an average, each KVK covers 43 villages and serves approximately 4,300 farmers, with approximately 80% of these villages located over 10 kilometres away from its premises. Notably, off-campus activities outweigh on-campus engagements, emphasizing the KVKs' proactive outreach efforts. Impressively, 96% of farmers' requests are attended to by KVKs, demonstrating their responsiveness to farmers' needs. The adoption of KVK-recommended technologies has led to a notable 42% increase in productivity, while the resultant enhanced incomes are often directed towards improving education, healthcare, and housing. Moreover, each KVK annually trains about 100 individuals in agripreneurship, with approximately 25% of trainees embarking on self-employment ventures thereafter. KVKs also reported a competitive advantage over other organizations providing technology services.

The impact study conducted by the International Food Policy Research Institute (IFPRI) in 2019 highlights the significant contributions of KVKs to agricultural development in India. It reveals that KVK interventions have resulted in an additional net farm income of ₹5752 per hectare, demonstrating their effectiveness in enhancing farmers' livelihoods. Moreover, the study indicates a remarkably high rate of return on expenditure invested in KVKs, with one year of incremental gain covering approximately 12 years of expenditure. Additionally, the Benefit Cost Ratio for expenditure on KVKs is reported to be 11.78, underlining the favourable economic returns generated by KVK initiatives. These

findings underscore the substantial impact and cost-effectiveness of KVKs in promoting agricultural productivity and income generation among farmers across the country.

Other schemes and new initiatives

KVKs are actively implementing several impactful schemes aimed at enhancing agricultural practices and empowering communities. Among these, ARYA (Attracting and Retaining Youth in Agriculture) is being implemented across 100 KVKs. An appreciable effort has been made which could result in developing capacity of 65,661 youths, and translating their skills in establishing 14,878 enterprises and ensuring retention of youth in agriculture. Similarly, KSHAMTA (Knowledge Systems and Homestead Agriculture Management in Tribal Areas) covering 125 tribal districts have materialized in conducting 26,800 demonstrations and could train 200,000 tribal farmers. This has helped in promoting sustainable livelihoods, and conserving the indigenous knowledge systems. Considering the role of women in agriculture, NARI (Nutri-sensitive Agricultural Resources and Innovations) project is being implemented with the help of diverse stakeholders to influence sustainability of food and nutritional dynamics by empowering women in agriculture.

Looking at the importance of sustainable agriculture, 425 KVKs have been instrumental in promoting natural farming by organizing 6,777 awareness programs engaging 6.80 lakh farmers, conducting 4,105 demonstrations, and developing the capacity of 37,978 farmers through 418 training programs. KVKs have also spearheaded various initiatives to revolutionize agriculture, including Kisan Sarathi, a digital platform with over 1.74 million registered farmers and more than 5.8 crore advisories sent, and KISAAN 2.0, which integrates over 300 agricultural Apps into a single interface accessible in multiple Indian languages.

KVKs embraced drone technology to modernize farming practices and providing the exposure to students through Atal Tinkering Labs. Additionally, initiatives like Landscape Diagnostic Survey (LDS) in pulses across 52 districts and the promotion of FPOs, with KVKs supporting 117 FPOs and functioning as Cluster-



Organic cultivation of cabbage



KVK Jalandhar



Large scale adoption of toria as second crop



FLD on toria

Based Business Organizations (CBBOs), signify their holistic approach towards agricultural development. The KVKs are building partnership and collaborating with 61 ICAR Institutes, 31 Ministries/departments of Government of India, and private players, like Amazon, Bayer and Krishi Jagran which underscore their commitment to innovation and convergence. Linkages with Common Service Centre (CSC) is going to be the game changer in transmitting agricultural information and making farmers aware about new technologies and schemes. These schemes collectively demonstrate KVKs' commitment to fostering innovation, empowering communities, and ensuring the sustainability of agricultural practices across diverse landscapes.

Issues of KVKs

KVKs face a myriad of challenges that require attention to bolster their efficiency and effectiveness. Initially allocated with a sanctioned strength of 22 personnel, the current workforce has dwindled to just 16 individuals. Concurrently, the scope of mandated activities has expanded significantly, and expectations of diverse stakeholders has also increased manifold to address the current agricultural challenges. Moreover, crunch of human resources (vacant positions) at the KVK level exacerbate its strain, impeding their ability to function optimally. Further, lack of uniformity and various administrative and financial issues related to KVK personnel across the host organisations is impacting their performance. Considering the role of decentralized decision making in excelling extension activities at the KVK level, the need is being felt to delegate the matching authority to KVK Heads across the host organizations. Despite possessing qualifications equivalent to academic faculty members at State Agricultural Universities (SAUs) and ICAR Scientists, SMSs in KVKs also need equitable acknowledgment and recognition. Therefore, the host organisations have greater role to play in addressing such issues for the betterment of KVK system.

CONCLUSION

The establishment of KVKs by the ICAR was an important institutional innovation, marking a significant milestone in the last five decades. The remarkable growth in their numbers, currently standing at 731

across the country, underscores the importance of these centres in fostering agricultural development. KVKs play a crucial role in the assessment and dissemination of agricultural technology, earning widespread appreciation for their impactful contributions. Notably, no other agricultural system in the country, be it large or small, boasts a decentralized research capacity as robust as the frontline initiatives undertaken by KVKs at the district level. These Farm Science Centres serve as dynamic hubs for research, extension, and capacity building, facilitating the seamless transfer of cutting-edge agricultural technologies to farmers. The district-level presence of KVKs ensures that the benefits of research and innovation reach at the grassroots level, and directly impacting local farming communities.

The KVK model has indeed emerged as a beacon of success in agricultural development. However, as we confront new challenges, it becomes imperative to pivot our focus towards the conservation of natural resources, achieving higher agricultural productivity sustainably, and enhancing farmers' income by optimizing the farming-to-market value chain efficiency. In this evolving landscape, KVKs need to strengthen its efforts not only in transforming agriculture, but also ensuring economic sustainability, and accelerating future agricultural growth. By emphasizing the conservation of natural resources, such as water and soil, KVKs can promote sustainable agricultural practices that mitigate environmental degradation while ensuring long-term productivity. Furthermore, by leveraging innovative technologies and best practices, KVKs can facilitate the adoption of methods that enhance productivity without compromising sustainability. This includes promoting precision farming techniques, organic/ natural farming, and integrated pest management strategies tailored to local conditions. By embracing a holistic approach that balances productivity with sustainability and income generation, KVKs can continue to serve as engines of change, driving inclusive and resilient agricultural development in the years to come. However, the issues and challenges being faced by the KVKs needs immediate attention from various level so as to strengthen their capacity and decision-making process while achieving the diverse tasks expected from them.

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