

Model village:

A novel approach towards inclusive development

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The agricultural sector ensures nation's nutritional security and livelihood of two-thirds of Indian population. Therefore, an assortment of interventions have been carried out by both government and non-government agencies with the aim of developing the farming communities. Krishi Vigyan Kendras (KVKs) and other research institutes in the Indian Council of Agricultural Research system adopt villages with the goal of transferring new technologies, agricultural innovations and other research findings and ultimately, creating model villages that other villages can follow by successful demonstration findings. Also, infrastructure, economics, social issues and the environment were all inter-connected, they also developed in addition to farming. All the technological interventions of agriculture and allied were included in a particular village for demonstration by Krishi Vigyan Kendras and other governmental agencies, hence it is also called a technology village.

Keywords: Model village, Merha, Technological interventions, Technology village, Uprama

INDIA is an agricultural country and has 6,40,867 villages. According to the 2011 census by the Government of India, 68.84 percent of the rural population relies on agriculture for subsistence. The green revolution led to an increase in food grain production due to the latest varieties and technology being

developed through research. But even today, the technologies are not reaching up to the farmers in the villages, due to which the satisfactory results are not being achieved. To get rid of these constraints, the concept of "Model village" can prove to be a boon for the farmers. Model villages and Gram Swaraj had

long been ambitions of Mahatma Gandhi, the Father of the Nation. The Government of India began the Sansad Adarsh Gram Yojana (SAGY) on October 2, 2014, with the goal of adopting villages and making them serve as models for the remaining villages in the nation. Under SAGY, each Member of Parliament



Rain water harvesting in model village Merha



Exposure visits of farmers in model village Uprama



Jalkund for supplemental irrigation in Merha



Check dam in model village Merha



Seed production in model village Merha



Zero tillage wheat demonstration in model village Merha

adopts a village in their area and turns it into a "Model Village." This initiative is known as Holistic Village Development Programme (HVDP). It calls for the village's integrated development in different sectors, including livelihoods, environment, agriculture, health, and education. In order to speed up the lab to land process, the Indian Council of Agricultural Research (ICAR) programme "Mera Gaon Mera Gaurav" also aims to foster direct scientist-farmer interface. By adopting villages, this programme seeks to regularly update farmers with the necessary information, expertise and advisories to develop villages that were chosen. The objective is to use model villages as a benchmark for other villages in the country and encourage other communities to follow suit.

Agriculture: Critical component for village development

Adopting sustainable agricultural technologies with community engagement is necessary

in light of the various threats that agriculture is currently facing, including climate change, water crises, food loss, and fluctuating market prices, among many others. In addition to farming, model villages place a strong emphasis on resource evaluation and goal-setting based on the needs of the community. One such need is about water and soil conservation or natural resource management like rejuvenation of soil and water resources through micro-irrigation, plastic and stubble mulching, high density planting orchard, resource conservation technology, crop residue management, etc. Hence, model villages of KVK, Banka play a positive role for improving water availability, cropping pattern, livestock management and local employment prospects at grass root level in a sustainable manner.

Uprama (Lilatari-Kathchar), Rajoun, Banka

A Bihar government mega project-Climate Resilient Agriculture

(CRA) adopted village Uprama as an "Adarsh Village" for introducing modern technologies in agriculture while ensuring the participation of all sections of the village community. The primary obstacles faced by farmers in the Banka district of Bihar who practice the conventional rice-wheat production method based on extensive tillage are scarcity of water, energy, and labour; rising production costs; declining farm income; and unpredictable weather patterns. To address these challenges, conservation agriculture-based crop management practices were developed, adapted and promoted in the region. Due to annual major water crisis, the village decided to opt for climate resilient agriculture. As a result of their persistent efforts to conserve water, groundwater levels rose and the hamlet began to thrive. Water-smart technologies like a furrow-irrigated raised bed, micro-irrigation, rainwater harvesting structure, cover-cropping, laser land leveling, reuse wastewater,



Drum seeder paddy demonstration in model village, Uprama



Happy seeder wheat demonstration in model village, Uprama

deficit irrigation and drainage management support farmers to decrease the effect of variations of climate. Farmers implemented diverse technologies predicated on precise assessments of crop water requirements, groundwater replenishment methods, adoption of scientific water conservation techniques, modification of fertilizer and irrigation timelines, cultivation of drought-resistant varieties, adjustment of planting schedules, irrigation management, and the adoption of zero-tillage practices to achieve satisfactory crop yields despite insufficient rainfall. Farmers' library started in Uprama village to update the farmers' knowledge of agricultural innovations and to develop an affection of reading in farmers so that they can implement technical interventions in their fields. This resulted in an increase in productivity and output of crops and animals by offering ideas and information to forward-thinking farmers, farm women, rural youth and extension professionals.

Merha (Jamdaha), Katoriya, Banka

Merha is an adopted village for rain fed environment and the project was started in 2015 at Banka by ICAR-ATARI, Zone II, Kolkata under the National Innovations on Climate Resilient Agriculture (NICRA) network project spearheaded by ICAR. *In situ* moisture conservation, water harvesting and recycling for supplemental irrigation, improved drainage in flood prone areas, conservation tillage where appropriate, artificial ground water recharge through renovation of

abandoned wells and water saving irrigation methods under natural resource management module were targeted. Crop production module consisted of introducing drought/temperature tolerant varieties, advancement of planting dates of *rabi* crops in areas with terminal heat stress, water saving paddy cultivation methods (SRI, aerobic, direct seeding), frost management in horticulture through fumigation, community nurseries for delayed monsoon, custom hiring centers for timely planting, location specific intercropping systems under crop production module, use of community lands for year round green fodder production, improved fodder/feed storage methods, and preventive vaccination. In the module of livestock production and management seed and fodder bank, commodity groups, custom hiring centre, soil health card, collective marketing and introduction of weather index-based insurance as well as climate literacy through a village level weather station under institutional interventions model were also introduced.

Rural youth: Key drivers of model villages

Agriculture is the main activity of Indian villages. Therefore, the path towards developing Indian communities must prioritize agriculture. Furthermore, the aspiration of autonomous Indian villages can only be realized when the whole community, of which the youth constitute a significant portion, assumes accountability for its own advancement and works in tandem with different

agricultural and rural development establishments as well as other relevant parties to establish viable agricultural businesses at the village level. Thus, it is essential that rural youth own the development process and realize their role in catalyzing agricultural development. The development of rural youth's skills, encouragement of their involvement in agriculture, food processing, and vocational training in the application of revolutionary agricultural technologies can all lead the way in this direction.

Way forward

Investigating the Indian context, where our national identity is shaped by our villages due to the prime work is agriculture. Although, it is crucial to save small communities from the migrating issue, it is also important to develop communities so they may contribute to the overall development of our villages. Model villages are a concept that is currently only prevalent in a small number of villages across the Bihar State. The idea of model villages can vary from village to village because each village has distinctive resources, opportunities, strengths and challenges.

SUMMARY



Model villages can adopt practices that are sustainable and eco-friendly, and ensure food security for future generations, sustainable agricultural practices, adopt climate-resilient agriculture practices that have a positive impact on the environment, use modern technology to improve

efficiency in production and enhance economic opportunities, use renewable energy to meet their energy needs and contribute to environmental sustainability, plant trees to benefit the environment, prevent soil erosion and conserve water can encourage community

participation in initiatives such as tree plantation drives, can be planned at the grassroots level to bring about convergence of initiatives and mobilize resources. All of these villages would be connected by the community's involvement without which









sustainability cannot be achieved by technology intervention, particularly in resource assessment and the thoughtful execution of all governmental initiatives.

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