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भाकृअनुप-कृषि प्रौद्योगिकी अनुप्रयोग अनुसंधान संस्थान, जोन-VIII, पुणे, महाराष्ट्र ICAR-Agricultural Technology Application Research Institute, Zone-VIII, Pune, Maharashtra

### Message

The confidence of the farmers has grown upon KVKs over the years and thus the success of programmes of other related ministries are also heavily dependent on KVKs for technological backstopping. Therefore, the KVKs have to be strengthened as **One Stop Solution** platform for agricultural technology integration and application. The single window approach of providing diagnostic, input and advisory services will enhance the effectiveness of these



centres, whereas the larger interest of sustainability and farm income can be addressed in a holistic way. The problems of Maharashtra, Gujarat and Goa are quite diverse ranging from acute drought to surplus water management. I hope that KVKs with its presence at district level will be able to converge with all departments and stakeholders to move ahead and address the emerging challenges.

A.K. Singh DDG (Agril Extension), ICAR, New Delhi

### Director's Words

Agriculture is a multifaceted enterprise, largely contributing in Indian GDP, has been raised with the development of modern day contemporary technologies. As focusing on technology centered growth of our farmers, KVKs have been emerged as technology and resource hub and establishing symmetry between technology development and technology dissemination. Technology mediated knowledge management appears to be advantageous for available, accessible and affordable information at distant places. Catering the needs of small and



marginal farmers, KVKs have developed different technological options for sustaining livelihoods and realizing higher real farm income through various enterprises linking with grassroots village institutions. KVKs have shown their visibility and presence in their jurisdiction through frontline demonstrations, technology sharing and strengthening linkages with different line departments on convergence mode.

In the short array of time, the ATARI, Pune in their jurisdictional KVKs was privileged to receive dignitaries viz., Hon'ble Vice President of India at KVK Baramati; Secretary, DARE and DG, ICAR; 8 Cabinet/State Ministers to 13 KVKs; DG, ICRISAT; MPs; DDGs and ADGs of ICAR at different platforms inspired the KVKs and appreciated the efforts for socio economic transformation of farming community. Two new KVKs (Kolhapur-II and Jalna -II) were sanctioned and launched by Shri Narendra Modi, Hon'ble Prime Minister of India. In this zone, major focus is being given on mitigating drought situation, micro irrigation, protected cultivation, Integrated Farming System, crop diversification, Farmer Producer Organizations (FPOs), utilizing weather related information, marketing, etc. Farm innovations are being documented and up-scaling in other areas. Special focus is being given for doubling farmers' income through strengthening convergence of KVKs with the line departments and other agencies. The wholehearted support of host organizations of KVKs; Directors of Extension Education of SAUs; Heads of KVKs and ATARI staff is duly acknowledged.

Foundation Stone of Administrative Building of ATARI, Pune is laid out by Dr. Trilochan Mohapatra, Hon'ble Secretary, DARE and Director General, ICAR today on 3<sup>rd</sup> August, 2019.

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#### About ATARI, Pune

The Indian Council of Agricultural Research has established 11 Agricultural Technology Application Research Institutes (ATARIs) across the country for monitoring, reviewing and coordinating the KVK system. Deputy Director General (Agricultural Extension) and supported by two Assistant Director Generals monitor and review the progress of KVKs (at present 713) through ATARIs. Earlier, there were eight ATARIs (Ludhiana, Kolkata, Barapani, Kanpur, Hyderabad, Jodhpur, Jabalpur and Bengaluru). Considering more number of KVKs and intricate monitoring/coordination mechanism, three additional ATARIs (Pune, Guwahati and Patna) were established in 2015 for effective monitoring, coordinating and reviewing the KVKs and started functioning from 2017. ATARI office site was visited by the DDG (Agril Extension) and VC, MPKV, Rahuri on 23<sup>rd</sup> May, 2019.



If you look in the history of ATARI, it was born as Zonal Coordination Unit in 1979 at 8 locations to monitor transfer of technology projects. The Zonal Coordination Unit was upgraded as Zonal Project Directorate (ZPD) in 2009. Again, it was upgraded as Agricultural Technology Application Research Institute (ATARI) in 2015.

#### Mandate of ATARI

- Coordination and monitoring of technology application and frontline extension programmes.
- Strengthening agricultural extension research and knowledge management.

#### Major Activities of ATARI

- Planning, monitoring and reviewing of KVK activities in the zone; to identify, prioritize and implement various activities related to technology integration and dissemination.
- Coordinating with SAUs, ICAR institutes / organizations, line departments and voluntary organizations in the zone for implementation of KVK mandated activities, and
- Facilitating financial and infrastructural support to KVKs for effective functioning.

| States      | Host Organizations |      |      |     |     |     | Total |
|-------------|--------------------|------|------|-----|-----|-----|-------|
|             | SAUs               | NGOs | ICAR | DUs | OUs | SDA |       |
| Maharashtra | 17                 | 28   | 01   | -   | 01  | 00  | 47    |
| Gujarat     | 18                 | 07   | 02   | 03  | -   | 00  | 30    |
| Goa         | -                  | -    | 01   | -   | -   | 01  | 02    |
| Total       | 35                 | 35   | 04   | 03  | 01  | 01  | 79    |

#### State and Host Organization wise KVKs

#### Additional KVKs in Larger Districts of the Zone

In Maharashtra, 14 districts (Amaravati, Ahmednagar, Pune, Nashik, Aurangabad, Buldhana, Nanded, Beed, Yavatmal, Solapur, Jalgaon, Satara, Jalna and Kolhapur) are having two KVKs in the district while double KVKs have been established in 3 districts (Banaskantha, Kutchh and Rajkot) of Gujarat.

#### About Krishi Vigyan Kendras

Krishi Vigyan Kendra is a frontline extension model at district level, designed and nurtured by the ICAR to showcase the frontier technologies, capacity development of different stakeholders and front runner in technology application. It acts as *One Stop Shop* for solving farmers' problems through real time agro-advisory in different forms. **Vision:** Science and technology-led growth leading to enhanced productivity, profitability and sustainability of agriculture.

**Mission:** Farmer-centric growth in agriculture and allied sectors through application of appropriate technologies in specific agro-ecosystem perspective.

**Mandate:** Technology Assessment and Demonstration for its Application and Capacity Development



#### Human Resource Development Programmes

### Capacity Building of Home Science Experts of KVKs in Maharashtra

A programme on '*Capacity Building of Home Science Experts*' was organized at KVK, Jalna during 27-29 November, 2017. In all, 30 SMSs (Home Science) from 22 districts of Maharashtra were participated. Major focus was given on acting as co-trainer, working in collaborative manner, nutrition agriculture, developing message capsule, nutritional garden at the centre, quick technology flow, successful cases and developing technology inventory. The home scientists were oriented about changing roles, technological options, identifying personal strength, target setting behaviors and achievement motivation syndrome through simulation games, interaction with successful farm-women innovators.



#### **Operationalising Farming System for Nutrition through KVKs**

ICAR-ATARI, Pune and MSSRF, Chennai jointly organized a workshop on '*Operationalising Farming System for Nutrition*' at KVK, Narayangaon (Pune) on 24<sup>th</sup> April, 2018 to



establish Farming System for Nutrition (FSN) models in KVKs to address the problem of malnutrition in rural areas. In this workshop, KVK experts from 10 districts and 11 KVKs of Maharashtra and 2 KVKs from Gujarat participated. Major focus was given on identifying the prevalent nutrition deficiencies, designing the farming system, processing and storage, sustainability, investing in nutrition literacy and leveraging agriculture for nutrition and developing a monitoring framework, etc. Participants were then divided into four groups and asked to develop a FSN model for any one KVK for the forthcoming kharif season. Models were prepared and presented for discussion.

#### IPM for Kharif Crops with Special Focus on Pink Boll Worm in Cotton in Maharashtra

A training course on '*IPM for Kharif Crops with Special Focus on Pink Boll Worm in Cotton in Vidarbha and Marathwada Regions'* was organized at KVK, Washim during 30-31 August, 2018. In this course, 35 participants belonging to 22 KVKs of Vidarbha and Marathwada regions were participated. In inaugural address, Dr. V.M. Bhale, Vice Chancellor, PDKV, Akola urged to follow integrated approach for pink boll worm control in cotton. His emphasis was on experimenting different IPM modules at KVK level.



Dr. Lakhan Singh, Director, ICAR-ATARI, Pune said that there is a need to understand the life cycle of insect & pest for developing effective plant protection measures. Convergence of KVKs with PoCRA, ATMA, SAUs and ICAR institutes made a significant difference in managing pink boll worm through advance micro level planning, selection of early duration Bt hybrid for planting, planting of cotton with refugee and other appropriate measures.

#### Training Programme on Developing Entrepreneurship in Floriculture

A training programme for '*Developing Entrepreneurship in Floriculture*' was organized at KVK, Baramati from 23-25 January, 2019. In total, 25 trainees from Maharashtra and Gujarat attended the course, out of which 11 were Subject Matter Specialists (SMS) of KVKs and 14 were floriculture entrepreneurs.

In the training course, innovative training methods and simulation games were used. Entrepreneurial motivation of trainees was enhanced through experiential learning based group work. Microlab was used to facilitate sharing thoughts and feelings. Ring toss and tower building exercises were played for understanding target setting behaviour, achievement need, hope of success, fear of failure, managing feelings, perception of blocks, help, concentration and focus on achievement goal, etc. were conducted.

Participants were sensitized on entrepreneurial opportunities like ornamental plants, vertical gardening, tissue culture, media, dry flower industry, different options for growing potted plants, etc. Floriculture Entrepreneurs and SMS could identify through group discussion – the qualities of successful floriculture entrepreneurs, requirements and reasons for success and or failure in floriculture enterprises.

#### Master Trainers' Programme for Developing Entrepreneurship

A four days **Master Trainers' Programme for Developing Entrepreneurship** was organized at KVK Narayangaon (Pune-II) from 27-30 January, 2019. In total, 25 Subject Matter Specialists (Agril Extension) from different KVKs of Maharashtra and Gujarat were attended the course.



Innovative training methods were used by specially trained Entrepreneurial Motivation Experts to make the training lively and interesting, simulation games, group exercises and experiential interactive lecturettes were used. KVK SMSs in Agricultural Extension had reinforced their motivation training skills through practice sessions and feedback. All the SMSs have experienced great change in their outlook towards training rural youths in 'helping to help themselves' to become entrepreneurs by imbibing entrepreneurial spirit and motivation to enhance their farm income.





#### Capacity Building Programme on Advances in Horticultural Technologies for 31 KVKs of Maharashtra and Gujarat

The ICAR-ATARI, Pune and ICAR-IIHR, Bengaluru jointly organized a three days capacity building training on 'Advances in Horticultural Technologies' at Bengaluru from 4-6 July 2019. Training programme was organized for Subject Matter Specialists (Horticulture) of 31 KVKs of Maharashtra and Gujarat. The aim of training was to sensitize the participants on advanced horticultural production technologies to disseminate in their respective districts of Maharashtra and Gujarat. Dr. M.R. Dinesh, Director, ICAR-IIHR remarked Maharashtra and Gujarat as the vibrant states as far as adoption of horticultural production technologies are concerned. Dr. Dinesh urged the KVKs of these states for coming forward for adopting advanced horticultural production technologies of ICAR-IIHR.



Dr. Lakhan Singh, Director, ICAR-ATARI, Pune urged the KVK experts for choosing the most workable horticultural technologies for technology assessment and demonstration in the KVKs group. Dr. Singh also urged the KVKs for identifying the technologies that can be commercialized in their districts. He also opined the ICAR-IIHR for providing the appropriate and latest technologies to prepare the inventory of horticultural technologies for Maharashtra and Gujarat.

### Training on 'Preparation and Dissemination of Agromet Advisories at Block Level'

ICAR-ATARI, Pune in collaboration with IMD, Pune organized a two days orientation training cum workshop on *'Preparation and Dissemination of Agromet Advisories at Block Level'* for 21 KVKs (10 from Maharashtra, 9 of Gujarat and 2 from Goa) during 6-7 July 2018 at KVK, Aurangabad. The participants were oriented about operational Agromet Advisory service under GKMS, observatory network of IMD, AWS, Agromet observatory, different observations like Doppler Weather Radar (DWR) satellite Information, their application, access to data, weather forecasting in spatial and temporal scales, use of agromet products, crop information and components of AAS bulletin and



its preparation. Hands on training on the preparation of Agromet Advisories for sowing, irrigation, fertilizer and pesticide application, harvesting using realized and forecast weather was given. Advisories for extreme weather situations were also prepared using sample data.

#### **Skill Development Training for Trainers**

A three days Skill Development Training for Master Trainers was organized at Anand Agricultural University, Anand on 25-27 September 2018, for enhancing skills and harnessing opportunities by the rural youths in agriculture and allied sectors. Dr. Lakhan Singh, Director, ICAR-ATARI, Pune emphasized the need of skill development among rural youths especially school and college dropouts for bringing them into mainstream of growth and to make them self-employable and creating the entrepreneurial behaviour for their better livelihood. Interest and capacity of the rural youth, identifying proper trade, understanding market and demand in the area and convergence across sectors in terms of skill training, financial support, etc. need special attention to get success by the entrepreneur, he added. Dr. Arun Patel, Director of Extension Education, AAU, Anand highlighted the need of skill development and its role in entrepreneurship development by citing examples. Integration of extension efforts, complete training for changing their knowledge, skill and attitude in desired way, was also highlighted.



#### **Farm Innovators Meets**

#### Farm Level Stress and Innovations-2017

Two days Farm Innovators Meet on 'Farm Level Stress and Innovations' was organized at KVK, Baramati during 7-8 October, 2017. Innovative farmers of three states namely Maharashtra, Andhra Pradesh and Telangana were invited to share their innovative interventions. In this event, 80 participants including innovative farmers, KVK experts, scientists and Farm Producers Organizations' representatives were participated. Dr. A.K. Singh, DDG (Agril Extension), ICAR, New Delhi urged to develop farm technologies as per need of the farmers under varied agro-climatic conditions. Sharing experiences of innovative farmers/model villages should be documented and up-scaled in other areas. Elders in the villages should be consulted and their rich experience must be recorded.

#### **Innovative Farmers Meet-2018**

Innovative Farmers Meet was organized at KVK, Narayangaon, Pune on 24<sup>th</sup> February, 2018. In this event, >60 innovative farmers participated and shared their innovative ideas and innovations. Documenting farm innovations and un-noticed innovative ideas used by the farmers in crop husbandry and other allied components of livelihood options need to be documented. Different informal methodological ways of identifying and observing the innovative practices followed by the farmers in farming, livestock rearing, etc. are to be focused. Several farm innovations developed by the farmers were presented like mini 4 wheel drive tractor, eco-pest trap, hydraulic silage pressure, fertilizer slurry applicator, groundnut pod separator machine, BBF with spraying machine, use of drumstick leaves for *paratha* preparation, roti maker, spacing management in fruit crops, etc.



#### **Zonal Review and Action Plan Workshops**

#### Annual Zonal Workshop of KVKs at MPKV, Rahuri

Annual Zonal Workshop of KVKs was organized by ICAR-ATARI, Pune during 5-7 May, 2018 at MPKV, Rahuri. In this program, 79 KVKs of Maharashtra (47), Gujarat (30) and Goa (2) participated



and presented their progress (2017-18) and action plan (2018-19). Dr. A.K. Singh, DDG (Agril Extension), ICAR, New Delhi urged the KVKs to connect each village digitally. More focus was given on farmer centric research, assessing location specificity of agricultural technologies under varied farming situations.



Dr. K.P. Viswanatha, Vice Chancellor, MPKV, Rahuri stated that KVK is the best model for technology application and enhancing farmers' income. KVKs need to popularize the best suited Integrated Farming System (IFS) models for sustaining income of the farmers. Dr. V.P. Chahal, ADG (Agril. Extension), ICAR said that extension models should be developed by SAUs. Mentor KVK may be identified based on performance and leadership of heads to sensitize other KVKs. Dr. Lakhan Singh, Director, ATARI presented a brief account of progress.

#### Annual Zonal Workshop of KVKs at ICAR-CCARI, Goa

Annual Zonal Workshop of KVKs was organized by ICAR-ATARI, Pune at ICAR-CCARI, Goa from 14-16 June, 2019. In this program, 79 KVKs of Maharashtra (47), Gujarat (30) and Goa (2) participated and presented their progress for the year 2018-19. Directors/Professors of Extension Education of 8 SAUs shared their initiatives on innovative monitoring mechanism and extension methodologies for overseeing the KVKs in their area jurisdiction.

In valedictory session, Dr. A.K. Singh, DDG (Agril Extension), ICAR, New Delhi said that KVK is working as One Stop Shop for solving farmers' problems through real time agro-advisory. There is need to understand the concept of doubling farmers' income and developing 2-3 villages by each KVK as model for enhancing farmers' real income through enterprise based



interventions. Entire village should be linked with grassroots village institutions for sustenance of regular income generation. KVK should take firm step to create or facilitate technologically the FPO/FPC for resource sharing and good marketing. New farmers should be added and linked to the KVK and nutri-rich and bio-fortified crops/varieties should be promoted. Frontiers of extension methodology and opportunities were discussed in length by Dr. P. Das, Ex-DDG (Agril Extension), ICAR, New Delhi. Institutional arrangement is required for scaling up and scaling out of best practices.

Dr Ashok Patel, Vice Chancellor, SDAU, S.K. Nagar; Dr. K.P. Viswanatha, Vice Chancellor, MPKV, Rahuri; Dr. S.D. Sawant, Vice Chancellor, BSKKV, Dapoli and Dr. V.P. Chahal, ADG (Agril Extension), ICAR; Dr. Lakhan Singh, Director, ATARI, Pune and Dr. E.B. Chakurkar, Director, CCARI, Goa also shared their views and thoughts for making KVKs vibrant.



### Workshop on Cluster Frontline Demonstrations for Maharashtra KVKs at KVK Solapur-I

Three days *Workshop on Cluster Frontline Demonstrations on Oilseeds and Pulses* was organized at KVK, Solapur-I during 16-18 January, 2018 to review the progress (2017-18) and finalizing action plan (2018-19). Focus on resource conservation technologies including drip irrigation, raised bed technology, mulching, intercropping and drought resistant



varieties of oilseed and pulses was given. Climate resilient technologies evolved by SAUs and ICAR institutes should be included under interventions.

#### Review Workshop on Cluster Frontline Demonstrations for Gujarat KVKs at Navsari

*Workshop-cum-Training on Cluster Front Line Demonstrations on Pulses and Oilseeds* for 30 KVKs of Gujarat was organized at Navsari Agricultural University, Navsari during 29-31 January, 2018. Major thrust was given to organize the



frontline demonstrations in scientific way and cluster mode. Proper identification of potential areas for pulses and oilseed crops, diagnosis of real problems, developing location specific technology modules, selection of willing farmers, empowering the participating farmers to conduct demonstrations in scientific way, training the farmers to record daily observations of crops/interventions, regular supervision of plots by the KVK experts, making the cluster demonstration as platform for real transformational training were suggested.

#### Workshop on Cluster Frontline Demonstrations for Gujarat KVKs at Bhavnagar

A 3 days review workshop-cum-training on "Cluster Front Line Demonstrations on Pulses and Oilseeds" for 30 KVKs of Gujarat was conducted from 7-9 December, 2018 at KVK, Bhavnagar. Major focus was on status of oilseeds and pulses production, problems in increasing the production, value addition & processing, pest scenario, export scenario, etc. He also discussed about the innovative marketing strategies, residue management, effective utilization of technologies to tackle adverse effect of climate change, developing success stories, demonstrating technologies effectively supported with action photographs. Action plan of ARYA project for attracting and retaining youth in agriculture at 11 centres (6 KVKs in Maharashtra and 5 in Gujarat) was also reviewed. Right type of enterprise for right type of youth needs to be identified considering its area specific demand and market. In advance, baseline survey, social and economic indicators for all enterprises need to be planned. Dr. Lakhan Singh, urged the KVK experts on linking cluster frontline demonstration program with nutrition sensitive agriculture.



## State Level Annual Action Plan Workshop of KVKs in Gujarat at Navsari

A two days **Annual Action Plan Workshop of KVKs in Gujarat** was organized at Navsari Agricultural University, Navsari during 1-2 March, 2019. In this program, 38 Heads and Scientists representing 30 KVKs of Gujarat participated and presented their action plan for the year 2019-20. In inaugural address, Dr. C.J. Dangaria, Vice Chancellor, NAU, Navsari said that success of the KVK depends on perfect and need based planning. He applauded the efforts of KVKs for frontline extension and creating more visibility in their concerned districts. He advised the KVK experts to identify the technological gap before designing different interventions. His more concern was on reducing cost of cultivation, organizing farmers, adopting latest technologies for enhancing farmers' income.



More focus was given on problem solving approach through designing on-farm trials, understanding farmers' perspectives, frontline demonstrations in cluster mode, farm family and agroecology based planning, enterprise based skill development, crop diversification, varietal diversification, climate resilient technologies, nutri-sensitive agriculture, case studies and personalized agro-advisory for increasing farmers' profit.

#### State Level Annual Action Plan Workshop on KVKs of Maharashtra and Goa at Baramati

Two days *State Level Annual Action Plan Workshop of KVKs of Maharashtra and Goa* was organized at KVK, Baramati during 15-16 March, 2019. In this workshop, Heads of 49 KVKs (47 KVKs from Maharashtra and 2 KVKs of Goa) presented their annual action work plan for the year 2019-20. In total, 75 participants attended the event.

In inaugural address, Shri Rajendra Pawar, Chairman, Agricultural Development Trust, Baramati said that farmers face many problems and they deal with new ideas. Grape and other fruit growers are actively engaged in local need based



research which replicate further. He urged the participants to develop activities on effective use of water and resource conservation for sustainable livelihood of farmers. Based on existing agro-ecosystem, technology gap, farm related problems, different categories of farmers; the annual plan should be developed, as advised by the Director, ATARI, Pune. KVKs should include best technologies of the ICAR institutes and SAUs in their interventions. Conducting on-farm trials for solving major problems of many farmers in defined area is the major strength of the KVK. Common on farm trials were designed to solve the serious but common problems in 4-5 districts for bringing quick alternative solutions.

#### State Level Review Workshop on Cluster Frontline Demonstrations - Pulses and Oilseeds of Maharashtra KVKs at Dapoli

A two days *Workshop-cum-Training on Cluster Front Line Demonstrations on Pulses and Oilseeds* for 45 KVKs of Maharashtra was organized at BSKKV, Dapoli during 24-25 November, 2018. Dr. V.P. Chahal, ADG (Agril Extension), ICAR in his speech, gave focus on extension action research, adopting right methodology, reducing technological gap, linking cluster frontline demonstrations with nutritional security, getting best technologies from SAUs/ICAR institutes, etc. Convergence of KVK with other ministries in terms of financial support was



discussed. In pulses and oilseed beyond production, KVK should focus on processing, value addition and marketing through organizing farmers.

Proper identification of potential areas for pulses and oilseed crops, diagnosis of real problems, developing location specific technology modules, selection of willing farmers, empowering the participating farmers to conduct demonstrations in scientific way, training the farmers to record daily observations of crops/interventions, regular supervision of plots by the KVK experts, making the cluster demonstration as platform for technology transfer were suggested. Field day at appropriate time may be organized where all line departments, research institutions and nearby farmers may be invited for further large scale adoption. On 25.11.2018, Farmer FIRST Project of 3 centres (MPKV, Rahuri; JAU, Junagadh and NAU Navsari) was also reviewed.

### Annual Action Plan and Review Workshop of NICRA-KVKs at Baramati

Annual Action Plan and Review Workshop of NICRA-KVKs was organized at KVK, Baramati on 3<sup>rd</sup> July, 2017. Focus on impact analysis and up scaling of successful interventions in nearby villages was given. Upscaling of climate resilient technologies is needed in nearby villages.



### Zonal Action Plan cum Review Workshop of NICRAKVKsatJalna

Annual Action Plan cum Review Workshop of NICRA KVKs in Maharashtra and Gujarat was organized at KVK, Jalna during 10-11 September, 2018. Heads, Co-PIs and SRFs of 13 KVKs (8 KVKs from Maharashtra and 5 from Gujarat) were participated in the workshop. The workshop was inaugurated by Dr. M.C. Varshneya, Ex- Vice Chancellor (AAU, Anand & Kamdhenu University, Gandhinagar) and Chairman, Zonal Monitoring Committee of NICRA project. In his address, he opined that IFS model with crops, horticulture and livestock may be the workable solution on



climate change. Goat rearing, sericulture, cumin are the best options for marginal and small farmers. For cumin, post harvest management, bullock drawn farm machinery may be introduced. Priority of interventions and implementing effectively at farmers fields by taking farmers in confidence was suggested. Farmers need guaranteed rainfall prediction. Intercrop of black gram/green gram in cotton gave additional return and reduces the risk of adverse effect of weather change. One line of marigold with 6 lines of cotton may be one of the options in dry areas.

Dr. Ashok Dhawan, Vice Chancellor, VNMKV, Parbhani said that under threat of monsoon and having 40-45 days dry spells, we have challenge to protect the crops. In Marathwada, sweet orange orchards were saved by the KVKs and others in collaborative mode in drought year. Reducing incidence of pink boll worm in cotton in Marathwada and Vidarbha, KVKs played a greater role.

Dr. K. Sammi Reddy, Director, CRIDA, Hyderabad urged the KVKs

to give focus on quantification of impact of resilient practices, bringing out quality publications, advisory role in adjacent villages and small video clippings for further up-scaling. Dr. Lakhan Singh emphasized on mitigating farm level stress with innovative ways including in-situ moisture conservation, protective irrigation, water harvesting, inter cropping, diversified enterprises, etc.

Kadegaon and watershed village Kadwanchi was visited. Compartmental bunding, in-situ moisture conservation practices, climate resilient varietal demonstration of pigeon pea, crop protection activities specially use of pheromone traps and yellow sticky traps in cotton, artificial recharging of wells, successful farmer in goat farming, Custom Hiring Centre, sericulture interventions were seen and interacted with beneficiaries.



#### **Special Programmes**

**Sankalp Se Siddhi** programme was organised by 65 KVKs (Maharashtra-36, Gujarat-27 and Goa-2) during 18 August to 19 September, 2017. Union Ministers (12), MPs (41), State

Ministers (13), MLAs (37), farmers (37242), etc. were attended different events.





#### Swachhata Hi Sewa

Effort for making Clean India, oath was taken by different KVKs and ATARI officials for making surroundings clean and changing their attitude and behaviour. In all, 74 KVKs of the zone including 42 KVKs from Maharashtra, 30 Gujarat and 2 KVKs of Goa organized the Swachhata hi Sewa Program during 15<sup>th</sup> September to 2<sup>nd</sup> October, 2017. On this occasion, several activities were organized for having sense of cleanliness drive. Swachhata Pakhwada (16-31 December, 2018) was also celebrated by the KVKs.



#### Krishi Kalyan Abhiyan (KKA)

In zone VIII, 6 KVKs (Nandurbar, Osmanabad, Washim, Gadchiroli, Narmada and Dahod) implemented two months KKA program from 1<sup>st</sup> June 2018 to 31<sup>st</sup> July 2018 in aspirational districts. KKA-II was also launched on 2<sup>nd</sup> October 2018. For this, action plan was developed and implemented in convergence mode in 25 villages in each adopted district. Major Focus on NADEP, Micro Irrigation, IFS, Horticulture, Livestock and capacity building of farmers was given.



**World Soil Day Celebration** 

In the zone, 57 KVKs of (Maharashtra-42, Gujarat-13 and Goa-2) celebrated the World Soil Day on 5<sup>th</sup> December, 2017 in which 3 MPs, 2 State Ministers, 13 MLAs, 15683 farmers, etc. participated in the programme. In 2018, 77 KVKs celebrated

World Soil Day on 5th December. Total 207874 samples of soil, 7528 samples of water, 787 samples of plants and 2 samples of organic manures were analyzed by the KVKs. 5.4 lakh Soil Health Cards were distributed to the farmers.



#### **Rashtriya Mahila Kisan Diwas Celebration**

The Ministry of Agri-culture and Farmers Welfare had decided to observe 15 October every year as Rashtriya Mahila Kisan Diwas by all SAUs, ICAR institutes and KVKs. In the zone, 57 KVKs celebrated the event on 15<sup>th</sup> October, 2017 and 4500 farm women/participants attended the program. In 2018, 69 KVKs celebrated the programme and 10198 farm women participated and shared their innovative experiences. At this occasion, different activities like special lectures, exhibitions, quiz/ drawing competitions, innovative farm women's experience sharing, exposure visits, etc. were organized for benefitting the farm women.



#### Mera Gaon Mera Gaurav (MGMG)

MGMG scheme was launched to promote the direct interface of scientists with the farmers to accelerate the lab to land process. Major objective of the scheme is to make more contacts with farmers and scientists, developing linkages with line departments, providing on-spot advisory on regular basis by adopting villages by the scientists. In all 214 groups of scientists in the zone (Maharashtra- 41 groups, Gujarat-169 groups and Goa-4 groups) were constituted by 895 scientists. In total, 949 villages were adopted and 122643 farmers benefitted through different activities in 2017. In 2018, 813 villages were adopted and 85382 farmers benefitted through different activities.



#### Jal Shakti Abhiyan

The Ministry of Jal Shakti, Government of India has launched Jal Shakti Abhiyan- A Water Conservation Campaign across the country for creating awareness among all stakeholders including farmers on water conservation and rainwater harvesting. The first phase of Jal Shakti Abhiyan is being implemented from 1<sup>st</sup> July to 15 September, 2019. ATARI Pune has prepared an action plan to organize Jal Shakti Mela in identified blocks of identified districts by 23 KVKs in the zone (Maharashtra 15 KVKs in 8 districts), Gujarat (7 KVKs in 5 districts) and Goa (one KVK in South Goa district).

#### PM Kisan Samman Nidhi Programme

Total 78 KVKs of the zone (Maharashtra-46, Gujarat-30 and Goa-2) organised the Webcasting of PM's speech during launching of PM Kisan Samman Nidhi Programme on 24<sup>th</sup> February 2019 where more than 20000 farmers participated.



#### Webcasting of PM's Speech during Krishi Unnati Mela

Krishi Unnati Mela was organized at New Delhi during 16-18 March, 2018. In this mela, different exhibitions were arranged by the Ministry of Agriculture and Farmers Welfare, Govt. of India. On 17<sup>th</sup> March, 2017, the Prime Minister of India addressed the farmers and other participants. His speech was webcasted by 77 KVKs of the zone (45 KVKs of Maharashtra, 30 of Gujarat and 2 from Goa) where large number of farmers and farm women (25415) attended the event. In addition, Member of Parliament (3), State Govt. Minister (1), MLAs (6), Chairman Zila Parishad (61), District Collectors (5), bank officials (64) and other government officials (929) participated and shared their views towards enhancing farmers profit and sustainable agriculture. Doubling farmers income is being focused by adopting diversified farming systems.





**Kisan Diwas Celebrated** jointly by ICAR-ATARI, DFR and NRCG, Pune on 23<sup>rd</sup> December, 2018 at DFR farm. In this event innovative farmers were invited to share their experiences. They were also felicitated. Dr. S.D. Sawant, Director, NRCG; Dr. K.V. Prasad, Director, DFR; Dr. Lakhan Singh, Director, ATARI and Dr. Sandip Pawar, Director, PMFAI, Pune graced the occasion and remembered former PM Shri Charan Singh.



**Hindi Pakhwada Celebrated:** Hindi Pakhwada was celebrated at ICAR-ATARI, Pune and its closing function was held on 28 September, 2018. Dr. K.V. Prasad, Director, DFR, Pune; Head, ICAR-IVRI Centre, Pune and around 35 participants attended the program.



#### **Monitoring of KVKs**

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Monitoring of KVKs is being done at different platforms. It includes the visits of Cabinet/State Ministers, Zonal Monitoring committee, ATARI/SAUs, DAC/ICAR Institutes. Scientific Advisory Committee (SAC) members as formed in each KVK for suggestions and review of works in their area jurisdiction.



**Monitoring Mechanism** 

#### 13

#### Cabinet/State Ministers' Visits

At national level, KVKs were identified to monitor and review the activities performed by the KVKs in their area by Cabinet/State Ministers. In Zone VIII, 8 ministers visited 13 KVKs in Maharashtra, Gujarat and Goa. In addition, Hon'ble Vice President of India also visited the KVK, Baramati and applauded their efforts for empowering the farmers. He also advised others to follow the model of KVK Baramati and revitalize the KVK system.





### ZMC Team Reviewed the NICRA Villages in Maharashtra

Zonal Monitoring Committee (ZMC) visited NICRA villages under KVK, Nandurbar and KVK, Ahmednagar-I during 8-10 January, 2019 and KVK Baramati on 9<sup>th</sup> March, 2019 under



#### ATARI Website Launched (ataripune.icar.gov.in)

It was launched on 16 June, 2019, by Dr. A.K. Singh (DDG, Agricultural Extension, ICAR, New Delhi) on the occasion of Annual Zonal Workshop of KVKs at ICAR-CCARI, Goa. It has unique feature of *Naya Sandesh* reflecting innovative experiences of farmers and messages given by higher authorities for empowering the farmers.

chairmanship of Dr. M.C. Varshneya, Ex-Vice Chancellor, Anand Agricultural University, Anand and Kamdhenu University, Gandhinagar. Different interventions specially water harvesting, drip irrigation, mulching, short duration and drought tolerant varieties, loose housing, goat farming, integrated farming system, custom hiring service of farm implements, etc. were seen. Pomegranate, grapes, capsicum cultivation in poly houses provided sustainable income to the farmers. Processing of guava was suggested. Upscaling of silage making was appreciated. In Baramati, disilting of 8.5 km of water stream in six check dams in Jalgaon KP was done by the KVK in convergence mode and this increased the water table through tube wells in vicinity to the extent of 2-3 meter. It has brought 40 ha land nearby under cultivation.



#### Scientific Advisory Committee (SAC) Meetings

A good mechanism for monitoring and reviewing the KVK activities is developed at different platforms. At district level, SAC meeting is organized where last year's progress and next year's action plan is discussed. The SAC members nominated from different line departments, research institutes, SAU, NGOs, AIR, Doordarshan, progressive farmers, etc. take active part in interaction. During 2018-19, at 15 KVKs (Nashik-I, Aurangabad-II, Jalna-I, Nandurbar, Washim, Hingoli, Solapur-I, Baramati, Nashik-II, Akola, Nanded-II, Surendranagar, North Goa, Pune-II, Solapur-II) SAC meetings were attended. While in 2017-18, SAC meetings were attended at 8 KVKs (Pune-II, Nashik-II, Satara-I, Solapur-I, Ahmednagar-II, North Goa, South Goa and Vadodara).



#### **IMC Meeting**

First Institute Management Committee (IMC) meeting of ICAR-ATARI, Pune was organized on 28 January, 2019. The meeting was chaired by the Director, ATARI, Pune and members were Dr. V.P. Chahal, ADG, ICAR; Dr. R. Roy Burman, IARI, New Delhi; Dr. D.V.S. Raju, DFR, Pune; Dr. Vijay Mahajan, DOGR, Pune and Mr. J. Mathew as a member secretary.



#### **Research Projects/Programmes**

#### **Collaborative Research Projects**

 Development, Validation and Promotion of Cotton IPM with Major Emphasis on Pink Boll Worm in Jalna, Maharashtra in collaboration with ICAR-NCIPM, New Delhi; ICAR-ATARI, Pune and KVK, Jalna.

- UNICEF funded project on Farming System Nutrition through KVKs in Maharashtra: 19 KVKs in collaboration with MCAER, MSSRF, ATARI and KVKs.
- Impact Assessment of Cluster Frontline Demonstration on Pulses in Jalna, Pune, Solapur, Latur districts in Maharashtra in collaboration with Division of Agril Economics, IARI, New Delhi.

#### Applied Research Based Projects/Technology Application Programmes

- Farmer FIRST Project
- Attracting and Retaining Youth in Agriculture (ARYA)
- National Innovations on Climate Resilient Agriculture (NICRA)
- Cluster Frontline Demonstrations on Pulses
- Cluster Frontline Demonstrations on Oilseeds
- Pulses Seed Hub
- Nutri-sensitive Agricultural Resources and Innovations (NARI)
- Value Addition and Technology Incubation Centres in Agriculture (VATICA)
- Knowledge Systems and Homestead Agriculture Management in Tribal Areas (KSHAMTA)
- ICAR network project on New Extension Methodologies and Approaches (NEMA)

#### **Awards and Recognition**

 Padam Shree Award conferred to Shri Vallabh Bhai Vasrambhai Marvaniya of Junagadh (Gujarat) by auspicious hands of Hon'ble President of India on 11<sup>th</sup> March, 2019.



- Jagjivan Ram Abhinav Kisan Puraskar' received by Smt. Sunandabai Madanrao Shinde, Parbhani (Maharashtra) for 2016; Shri Dhirendra Kumar Bhanubhai Desai, Bharuch (Gujarat) of 2017; and Shri Samir Mohanrao Dombe from Pune (Maharashtra) for the year 2018 conferred by the ICAR, New Delhi.
- Pandit Deen Dayal Upadhyay Antyodaya Krishi Puruskar' given for the year 2017 to Mrs. N.S. Chaudhari, Surat, Gujarat and Smt Vasava Ushaben Dineshbhai from Narmada (Gujarat) for the year 2018 awarded by the ICAR, New Delhi.

 Zonal Best Award 'Pandit Deendayal Upadhyay Rashtriya Krishi Vigyan Protsahan Puraskar' conferred to KVK, Thane (2016); KVK, Tapi (2017) and KVK, Nandurbar (2018) by ICAR, New Delhi.



- N.G. Ranga Farmer Award for Diversified Agriculture-2018 awarded to Shri Udhav Asaram Khedekar from Jalna (Maharashtra).
- Dr. Lakhan Singh obtained IASWC Fellow Award-2018 conferred by Indian Association of Soil and Water Conservationists, Dehradun at ICAR-IISWC, Research Centre, Koraput on 06 February, 2019.

#### **Research Papers**

- Lakhan Singh, Rajesh Bishnoi, Bankey Bihari, D.M. Kadam, Madan Singh, Anil Kumar Malik, S.S. Shrimali and Raman Jeet Singh (2019). Effectiveness of mKRISHI® Personalised Advisory on Water and Soil (PAWS) in dissemination of agricultural information in north-western Himalayan region. *Indian Journal of* Agricultural Sciences, 89 (2): 246–52, February 2019.
- Bankey Bihari, Lakhan Singh, Rajesh Bishnoi and Suresh Kumar (2017) Prioritization of training needs and constraints faced by watershed field functionaries and farmers. *Indian Journal of Agricultural Sciences*. 87(5): 597-602.
- Trisha Roy, Suresh Kumar, Lekh Chand, D. M. Kadam, Bankey Bihari, S. S. Shrimali, Rajesh Bishnoi, U.K. Maurya, Madan Singh, M. Muruganandam, Lakhan Singh, S K Sharma, Rakesh Kumar, Anil Mallik (2019). Impact of Pusa Hydrogel application on yield and productivity of rainfed wheat in North West Himalayan region. *Current Science*. 116: 1246-1251.
- JPS Dabas, Nishi Sharma, SK Dubey, Ambrish Sharma, Lakhan Singh and AV Dubey (2018). Utilizing cow dung and slurry for energy efficiency of farms and households: Experiences of field studies across three Indian states. *Indian Journal of Agricultural Sciences*, 88 (8): 1208-13.



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