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Report of

Quinquennial Review Team

for

Krishi Vigyan Kendras

of

ICAR-ATARI Kolkata and Patna

(2011-12 to 2018-19)

R. K. Samanta
R. Parshad
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R. B. Sharma
Y. V. Singh
F. H. Rahman

Indian Council of Agricultural Research
New Delhi - 110001
February 2020

Quinquennial Review Team for Krishi Vigyan Kendras of ICAR-ATARI Kolkata and Patna

(2011-12 to 2018-19)

To
The Secretary, DARE & Director General, ICAR
Krishi Bhavan, New Delhi

Kolkata
February 8, 2020

Sub.: Submission of QRT Report of ICAR-ATARI Kolkata and Patna

Ref.: 1. F. No. A. Extn. 9/19/2019-AE-II dated 19.06.2019
2. F. No. A. Extn. 9/19/2019-AE-II dated 25.11.2019

Most Esteemed Sir,

The Quinquennial Review Team is pleased to submit the Report of QRT for ICAR-ATARI Kolkata and Patna (2011-12 to 2018-19) for your kind approval and further appropriate action. The Committee is thankful to the Council for assigning this responsibility to us and we have completed the same within the allotted time frame.

Sincerely yours,

R. Parshad
Member

C. Satapathy
Member

R. B. Sharma
Member

Y. V. Singh
Member

F. H. Rahman
Member Secretary

R. K. Samanta
CHAIRMAN

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- Dr. Randhir Singh, ADG (Ag. Extn.), ICAR
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PREFACE

The ICAR has set up a very unique system of Quinquennial Review Teams with Members having vast knowledge of the research and technology transfer system in the Country. The Team is expected to assess the quality of the demonstrations conducted, efforts made for transfer of technology, evaluate innovative extension methodology, examine existing manpower in KVKs and suggest road map along with changes in structure and organizational aspects to strengthen the KVK.

The Quinquennial Review Team (QRT) for the KVKs of two ICAR-ATARIs of Kolkata and Patna spread over 4 states and 1 U.T. (West Bengal, Odisha, A&N Islands of ICAR-ATARI Kolkata, Bihar and Jharkhand of ICAR-ATARI Patna not only reviewed the programme activities of 127 KVKs (59 of Kolkata and 68 of Patna) but also dedicatedly assessed the impact of the selected KVKs through field visits, interactions with all stakeholders and by travel workshops, listening and witnessing the presentations of all KVKs by its Heads, depicting their achievements.

Further, the QRT have gone through very critically the Compendium of accomplished reports submitted by the KVKs in prescribed format. The report of the QRT is summarized in Seven chapters.

The last chapter exclusively deals with the **Recommendations**, derived from QRT's observations and strategic action points of KVKs, ATARIs and Host Organizations. In addition, the Team has considered perceptions of concerned Chiefs and Incharge functionaries of KVKs (VCs, DEEs of SAUs, Directors of ATARIs, Directors of ICAR Institutes, Heads of NGOs and all KVKs) on KVKs' performance, its strengths and weaknesses and also proposed action plan for its functional efficiency. The salient points have been made the part of the recommendations.

The QRT is fully convinced and sincerely feels that if the recommendations are effectively implemented and put into action, the KVKs will be instrumental in ensuring food and nutritional security and will become a more effective and vibrant Institution at District level leading to Nation's growth.

Kolkata
8 February, 2020

R. K. Samanta
R. Parshad
C. Satapathy
R. B. Sharma
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F. H. Rahman

EXECUTIVE SUMMARY

1. The Secretary, DARE and DG, ICAR vide F. No. A. Extn. 9/19/2019-AE-II dated 19.06.2019 and F. No. A. Extn. 9/19/2019-AE-II dated 25.11.2019 constituted the present QRT for ATARI Kolkata and ATARI Patna under the Chairmanship of Dr. R. K. Samanta with Dr. R. Parshad, Dr. C. Satapathy, Dr. R. B. Sharma, Dr. Y. V. Singh as Members and Dr. F. H. Rahman as Member Secretary, to review the work during 2011-12 to 2018-19. Terms of references included to review programmes of KVKs, to assess quality of demonstrations conducted, efforts made for transfer of technology, evaluate innovative extension methodology, assess existing manpower in KVKs and suggest road map along with changes in structure and organizational aspects to strengthen the KVKs.

2. The QRT covered 127 KVKs (59 KVKs under ICAR-ATARI Kolkata and 68 KVKs under ICAR-ATARI Patna). *Modus operandi* adopted was interactions with Directors of ATARIs, presentation of KVKs during work-shops, interaction with Heads of KVK, Host Institutions, Line Department, Farmers and other stakeholders. The review process of the QRT started on 19.07.2019 with an inaugural meeting at ICAR-ATARI Kolkata where Directors of both the ATARIs, i.e., ATARI Kolkata and ATARI Patna were present along with the Directors of Extension Education of BCKV, Mohanpur; UBKV, Coochbehar and WBUAFS, Kolkata from West Bengal, Dean Extension, OUAT, Odisha; Directors of Extension Education from BAU, Sabour and RPCAU, Pusa from Bihar and Directors of Extension Education of BAU, Ranchi, Jharkhand. In the meeting, Directors of both the ATARIs presented an overview of their respective ATARIs while all DEEs briefed the QRT about the KVKs and their working under their respective control.

3. The distribution of KVKs among states are - 33 in Odisha, 23 in West Bengal, 3 in A & N Islands, 44 in Bihar and 24 in Jharkhand. These KVKs are operated by Host institutions like SAU (81), CAU (16), ICAR (13), DU (2), CU (1), NGO (11) and SDA (3). The KVKs in Bihar are situated in three agro-climatic zones, Jharkhand in two, Odisha in ten and West Bengal in six agro-climatic zones. In case of A&N, three KVKs are situated in coastal zone only. The KVKs under QRT cover all agro-climatic zones in Eastern India.

4. The roles of ATARIs are to formulate, implement, monitor and evaluate the performance of KVKs with full cooperation in the matters of functions and activities as per directions of ICAR.

5. The mandate of KVKs is Technology Assessment and Demonstration for its application and capacity development coupled with activities of (i) On-farm testing to assess the location specificity of agricultural technologies under various farming systems, and (ii) Frontline

demonstrations to establish production potential of technologies on the farmers' field. The specific activities of KVK include Training of farmers and extension personnel to update their knowledge and skills in modern agricultural technologies, resource and knowledge centre of agricultural technologies for supporting initiatives of public, private and voluntary sector for improving the agricultural economy of the district.

6. Taking two ATARIs into consideration, 22 (17%) of KVKs are of 10 years old, 70 (55%) within 11 to 20 years, 20 (16%) between 20 to 30 years and 15 (11%) more than 30 years. The majority of surveyed KVKs are within age of 11 to 20 years of establishment.

7. SWOT analysis of all the KVKs

Based on the interactions by QRT with different stakeholders and the futuristic look, this analysis was exercised for readying the KVK system and the two ATARIs to meet the emerging challenges and opportunities.

8. Based on such meetings, the QRT identified the KVKs to be visited for detailed analysis, and meeting with Line Departments, NGOs and other Institutions. A state wise visit program was planned and implemented covering West Bengal, Odisha, A&N Islands, Bihar and Jharkhand which have been well described in the report. Details of the QRT interactive meetings are given in Annexure III.

During the visits to KVKs and their adopted villages, there were detailed discussions with KVK Scientists, Line department officers, Farmers, Farm women, Rural youth, Bank officials providing agriculture credit, etc. Very often, the discussions centered on how the farmers sell their produce, and the problems faced to get remunerative price.

9. The QRT during visit to KVKs critically assessed the infrastructures, arable area, farming systems practiced, degree and nature of convergence with line departments and other players engaged in rural development in the district.

After a thorough discussion, the QRT identified a large numbers of critical issues affecting the working efficiency of the KVKs in the two ATARIs:

(i) Staff position

In case of ATARI Kolkata, unfilled posts of KVK Heads, SMSs, Assistant /Farm Manager/Stenographer (cumulative) were 20%, 31% and 37%, respectively. The situation is quite alarming to implement additional work load assigned to KVKs from ICAR and State Departments.

KVKs under ATARI Patna have a dearth of scientific staff. Overall, 41 % Head positions are unfilled, while 31% SMSs are not in position. Regarding Assistant/Farm

Manager/Stenographer and supporting staff, Jharkhand shows a very dismal state. The number of supporting staff is extremely inadequate, and 39% of total sanctioned posts in KVKs under ATARI Patna are lying vacant. Therefore, there are serious limitations for fulfilling the assigned mandate.

In case of Odisha, most of the KVKs (31 out of 33) are under the administrative control of OUAT, Bhubaneswar and are deficient of staff. In some of the KVKs interviews have been held and the positions are likely to be filled shortly. In Jharkhand, Birsa Agricultural University, Ranchi is yet to fill up many posts of scientists and other staff. Frequent transfer is also hampering the performance of KVKs. SMSs who were made Incharge Heads, were not able to satisfactorily present the report before QRT. Further, the QRT recommends that the transfer of scientific staff should be considered only after 5 years of service. In RPCAU, Pusa inadequacy of staff has been observed. Since it is Central Agricultural University, all the posts will be filled as assured by Director of Extension Education and VC, RPCAU, Pusa.

(ii) Budget allocation and fund flow

Based on extensive analysis of fund flow process to KVKs, ATARIs and DEEs, it emerged that funds are allocated, namely (i) for KVK, (ii) ATARI (iii) DEE of SAUs and also Non-ICAR funds. KVKs under ATARI Kolkata had the budget provision over 8 years for KVKs of A&N, Odisha and West Bengal of Rs. 2,278.95 lakh, Rs. 18,573.32 lakh and Rs. 15,646.66 lakh, respectively totaling Rs. 36,498.93 lakhs. For ATARI Patna the budget provision over 8 years for KVKS of Bihar and Jharkhand was of Rs. 25,649.57 lakh and Rs. 14,343.09 lakh, respectively (total of Rs. 39,992.66 lakhs). For ATARI Kolkata the budget is reported to be Rs. 2,110.88 lakh and for Patna Rs. 455.83 lakh, respectively (total of 2,566.71 lakhs) during the 8 years. Budget allocated by ATARI Kolkata and Patna for strengthening DEEs of SAU for overseeing KVKs was reported to be Rs. 388.75 lakh and Rs. 449.58 lakh, respectively (total Rs. 838.33 lakhs). The Non-ICAR fund flow to KVKs under ATARI Kolkata was reported to be Rs. 48,564.48 lakh and ATARI Patna Rs. 45,353.86 lakh, respectively. The ratio of such fund to ICAR fund was in the ratio of 0.33:1 under ATARI Kolkata and 0.13:1 in case of Patna.

The allocated budget under Salary and Allowances was adequate. Recommendation of pay revision under 7th CPC, though implemented for ICAR KVKs, is yet to be implemented in all other types of host organizations. This has caused discontent in staff of other KVKs under different Host institutions. Release of fund for flagship programmes, like CFLD, got delayed sometime and KVKs found it difficult to conduct the same timely. Even there is no receipt of funds after conducting of programmes in few cases.

(iii) Skill upgradation of KVK staff

During the 8 years under review, the KVK personnel have attended very less skill trainings for updating their knowledge. The average number of KVK staff participating in such programmes per year was 1.1 in case of A&N, 2.9 in case of Odisha, 6.1 in West Bengal, 2.4 in Bihar, and 4.3 in Jharkhand. The QRT felt that training of KVK personnel should keep pace with the requirements and needs and may be enhanced by some fold.

ATARI Kolkata and Patna had organized HRD programs for KVK officials. QRT observed that in so far as conduct of HRD programmes like workshops, review meetings, training/orientation programmes, by ATARIs is concerned, ATARI Kolkata has performed fairly well while ATARI Patna, formed in 2017, is also working in positive direction. The number of programmes organized by ATARI Kolkata was 143 with participation of 5,705 persons, against 28 programs and 1,268 participants in ATARI Patna. Hopefully, ATARI Patna will also do its full-fledged services on this aspect after recruitment of staff and creation of allied facilities.

(iv) Infrastructure development

This was observed quite satisfactory. In case of minimal processing facilities, 4 KVKs of West Bengal, some of Odisha, Bihar and Jharkhand have done extremely well. As for portable carp hatchery, recommended by two earlier QRTs, the KVKs of West Bengal, Odisha and Bihar are in the stage of initiation. QRT opined that portable hatcheries should be taken up on priority basis. The Plant Diagnostic Lab is an important requirement, though established by some, these are not being put to use effectively. Though rain water harvesting structures are available in all the KVKs, the farmers are yet to realize the importance of these structures. This needs further emphasis. All the KVKs have Soil Water Testing Labs and are issuing Soil Health Cards.

Out of 127 KVKs under the two ATARIs, 11 KVKs (8.7%) have less than 10 ha of land, the essential requirement for sanctioning of KVK. Nearly 75 % KVKs have administrative blocks, 74% Farmers Hostel, 59 % Staff Quarters, 43.3% boundary fencing, 42.5 % have processing facilities.

The QRT recommends to have more Demonstration Units (at least two more) on Integrated Farming System, Hydroponics, Protected Cultivation. A museum of innovative technology available may also be set up at ATARI Headquarters. Drudgery reducing equipments, implements and advanced farm machineries be provided through custom hiring centers and may have a demo unit at each KVK level.

(v) Non-mandated activities

The KVKs are also engaged in non-mandated activities entrusted by different Welfare Departments including ATMA, RKVY, BGREI, etc. These Departments feel that KVKs are suitable organization to be entrusted with different activities because of scientific manpower, working climate and safe institutions for genuine utilization of resources. However, the KVKs with limited manpower, facilities and adequate work load as fixed by ICAR, find it difficult to execute all the non-mandatory activities in addition to their time bound and season bound workloads. Moreover many KVKs are not having staff as per sanctioned posts. Under such a situation, KVKs need to be assessed as to how much work load outside ICAR specifications they can undertake. There is no doubt that KVKs need additional resources as ICAR fund flow is inadequate and limited, for which a decision is required at ICAR level.

(vi) Needed uniformity in service conditions

During interactions it was observed that there was disparity in service conditions of KVK personnel among different Host Institutions. QRT is of the view to have uniform service conditions irrespective of the Host Institutions. ICAR may decide on this on priority to keep KVK as a vibrant institution, and encourage for movement of personnel for career advancement.

(vii) Technological assessment

All the KVKs have worked for assessment of technologies as per their agro-climatic conditions. The QRT is of opinion that KVKs are working well in this regard. Both ATARI Kolkata and Patna have effectively monitored these programs.

(a) On- farm trials

During the period under review, altogether 72,450 famers were involved in 7,912 on farm trials. The highest number of on farm trials was by KVKs of Odisha followed by Bihar, West Bengal, Jharkhand, and minimum in A&N Islands. Thematic area wise On-farm trials were highest in case of Crop Management/Varietal Assessment followed by Plant Protection, NRM, Animal Husbandry, Horticulture and Fisheries. The QRT realized that the variation was due to location specific problems. Many KVKs have incorporated more than 2-3 treatments. Only a few technologies based on OFTs have been included as recommendation by the Zonal Workshop and State level workshops. Director ATARI and Director of Extension Education of each SAU need to work out a mechanism of ensuring that results of OFTs are appropriately included in the 'Package of Practices' published by the Universities.

(b) Front line demonstrations

During 2011-12 to 2018-19, 2,21,715 FLDs were conducted covering an area of 57,362 ha. For FLDs on oilseeds and pulses, 53,929 and 64,596 FLDs were conducted. The KVK introduced tissue culture banana (var. G 9) cultivation which was advantageous over the local variety in regard of short duration of fruiting and enhanced productivity of about 25%. Significant number of farmers (244) in Thakurganj and Pothia blocks has profitably replaced rice in favour of TCB. The FLDs under crop/enterprise in all KVKs were conducted adequately. Our interactions with stakeholders showed that farmers and other stakeholders were appreciative of KVK's performance in both ATARI Kolkata and ATARI Patna.

(c) Training focus and process

During the period under review 64,634 training programs were conducted and 20,14,871 farmers and farm women trained in different technologies. The KVKs under both the ATARIs also trained 2,43,986 Extension personnel in 8,498 training programs. Rural youth were also trained. However, such programmes need to be reoriented. The training of extension personnel need to be in cutting edge technology, and 2-3 days. Inclusive growth being important, there is need to have training for disadvantageous groups. The case studies may be developed and used for making such training more relevant.

The Diploma in Agricultural Extension Services for Input Dealers (DAESI) off-campus programme is of utmost importance as this enables input dealers, who happens to be primary source of contact at the village level. As such, this programme may be introduced by all the KVKs under review.

(viii) Other Extension activities

A number of other extension activities were organized which had shown good impact. Other Extension activities in two ATARIs reported to be 12,568 in number, and on an average 110 / year / KVK.

(ix) Other Flagship programmes

The ATARIs also carried out Flagship programs like ARYA, MGMG, CFLDs on oilseeds and pulses, NICRA, PMKVY, KKA, Skill development under PMKVY and many other activities as contained in the report.

(x) Innovative Approaches

Innovative approaches were followed by different KVKs which facilitated last-mile reach. Some such activities like, On-line Agri Mart, Technology partnership and networking, Master Farmers' Development, Leadership development, Diet Diversity Score, Community Score cards,

Participatory Impact Assessment tool box, Female-Para vet technicians, Kisan Choupals, Video-Conferencing, use of social media platform for information dissemination, group mobilization through farmer field days are notable.

(xi) Provision of quality products and services

Seed/Planting Materials/Bio-products/Livestock/Fingerling production was usefully developed as income generating programme and helped farmers to adopt up-coming technologies. Quantity of quality seeds produced by all KVKs under both the ATARIs were 65,341 tonnes, seedling production 410.30 lakh, Bio-products of 7,945 tonnes and livestock and fingerlings production 311.55 lakhs, which deserved appreciation. Soil, water and plant analysis is another good area to educate farmers about soil health. During the period, 3,48,366 soil samples were tested and 6,02,465 Soil Health Cards provided. After launching of Universalization of Soil Health Card Mission by the Govt. of India in 2015, which was expected to be carried out by State functionaries, Govt. of Jharkhand collaborated with KVKs in Jharkhand by fund and infrastructure support and transferred part of the workload to KVKs, who laudably performed their role and provided about 2.5 lakh SHCs.

(xii) Recognition

The QRT observed that all the KVKs have received recognition at different levels (from village *Panchayat* to National level). The ICAR and State Governments have rewarded KVKs for their contribution to the growth of agriculture. The QRT expressed its satisfaction on this aspect. Smt. Rajkumari Devi of Mujaffarpur was awarded PADMASHREE by the Hon'ble President of India.

(xiii) ATARI's representation in staff recruitment and transfer in KVKs of SAUs

ICAR is financing the KVKs under the SAUs/CAUs and no representative from the ATARI is included in their Selection Committee. It is recommended that the Council may consider revoking of its earlier order [O.M. No. (1)/96-AE-I (Pt. I) dated 17.06.2005] and include concerned Director ATARI as one of the Members of the Selection Committee. Similarly, before transferring a Head/SMS of KVK ATARI's consent may be obtained.

(xiv) Concurrent evaluation

Indian Council of Agricultural Research have evolved a four-tier monitoring and assessment system for KVKs. Starting from the Host organization at the primary level followed by overseeing by Directorate of Extension Education, SAC, ATARI and finally at the ICAR headquarters. This was observed to be hugely satisfactory and practiced effectively. Scientific Advisory Committee Meeting (SAC) is held once a year to formulate plans and programmes for

KVK. However, it was observed that State University's VC/DEE do not join in these. Similarly, the participation of State Line departments is less. The Directors of ATARI Kolkata and Patna may impress upon the authorities for participation in SAC meetings. Also frequency of SAC meeting should be increased to two per year (one each before *kharif* and *rabi* seasons*).*

Significant recommendations are given hereafter,

Recommendations

1. **Strengthening Infrastructure & Logistical Facilities at KVK**

   Director ICAR-ATARI may initiate necessary interactive meetings with the concerned administration, and also inform the Council to impress upon the Host Organizations for ensuring timely release of the funds. Council may enhance Contingency (on average of 20 lakh), special provision for renovations of Hostel; and engagement of Driver (on contract basis) for effective use of Mobile Van.

2. **Urgent appointments of vacant positions under different categories in KVKs**

   Director ATARI may come up with a case wise note bringing out the administrative and financial issues for filling on priority the vacant positions and based on interactions with the Host Institutions propose a workable solution for filling the positions, especially when 100% finance is provided by the Council.

3. **Service conditions/Career Advancement of KVK Scientists**

   Looking at the present disparity in service conditions of Heads and SMSs working in SAUs/States/NGOs KVKs, it is recommended that the ICAR Headquarters may take-up this issue on priority to ensure similarity in service conditions including age of superannuation, experience recognition, career advancement, parity in scales and post retirement benefits to inspire and motivate the scientists to put-in their best.

4. **Monitoring of KVKs by ICAR-ATARI and Heads of host organizations to improve their performances**

   The existing system of technology back-stopping by the Director of Extension Education of the SAUs needs to be reviewed to fulfill the regular monitoring and technology back-stopping. Director ATARI needs to strengthen the monitoring system at the Institute level and organize at least one meeting half yearly with the DEEs and Heads of the Host organization and take appropriate concurrent measures.

5. **Focus Area (s) of KVKs must be distinctly emphasized**

   Director ATARI may ensure that for every KVK there are a few focus areas as per location specific needs and FPOs and SHGs, including rural women are imparted long-term skill

development training and provided necessary guidance and support to ensure long-term sustainability.

6. **Capacity building of KVKs ranked as 'C in a study by NILER&D (An autonomous Institution under NITI Aayog) sponsored by ICAR**

   Director, ATARI may arrange an intensive interactive meeting of Heads and SMSs of the KVKs whose overall performance was ranked as 'C' to find out the reasons of low rank and arrange for their capacity building to perform better by interactions with the KVKs ranked as 'A' , preferably in the next three months.

7. **Additional Demonstration Units at the KVKs and a museum at ATARI**

   As knowledge is the driving force for rational decisions, in addition to the existing Demonstration Units, the ICAR may sanction two additional demonstration units (Integrated Farming System, Hydroponics, and Nutritional garden - any two) in all the KVKs, and a museum depicting different innovative technologies at Headquarters of ATARIs.

8. **More emphasis on training of extension personnel**

   Director ATARI may specifically involve the State Development Departments for training of extension personnel in frontier areas. Further, such training, instead of one day, should be with more emphasis on practical exercises and interactions rather than lectures only.

9. **Seed hub-seed village promotion by KVKs**

   To ensure availability of quality seeds, planting materials, while finalizing the Action Plan, the Director ATARI may ensure that every KVK focuses on this important activity, to generate more income at the village level. The KVKs which have excelled in this area be encouraged to share their experiences, especially the process followed, with the other KVKs in the State.

10. **Resource generation by KVKs from other than ICAR organizations of similar functions**

    The Council is emphasizing on income generation by getting financial support from agriculture related institutions, including Corporate Houses. Though a few KVKs are already actively doing this, yet, Director ATARIs must ensure that at least 10 % of additional financial support is achieved by all KVKs from outside agencies. The resources so generated be used for creation of infrastructure at the KVK.

11. Capacity Building / updating the knowledge of KVK Scientists

A specific plan of action be prepared by the Director ATARIs for deputing the KVK scientists for participation in summer/winter schools, Seminar/Symposia etc. organized by the professional societies within the country and other international programmes. This action plan be approved by the DDG (Agricultural Extension), ICAR and a suitable budgetary provision may be made.

12. Farm Mechanization for drudgery reduction in farm operation – KVKs initiatives

Director ATARIs may ensure that every KVK in its jurisdiction organizes at least two institutional trainings, on-hand experience in use of an appropriate farm machinery and implements. Further, the specific tools and implements required for that district may be made available on custom-hiring basis and the KVK may facilitate the same through Private -Public Partnership.

13. Functional linkages/collaboration of KVKs with state development departments/ICAR institutions/SAUs/Central organizations/NGOs

KVKs must maintain and make functional linkages with other central/state development departments, organizations with focus on agriculture and rural development to energize the synergistic effect for effective and efficient empowerment of all stakeholders.

14. Ensuring ICAR annual sanctioned budget and special grant reaches the KVK

The Director ATARI may take necessary initiatives to ensure that the allocated budget and special grant provided to the concerned Administrative Head of SAUs/State Governments reaches to their KVKs in time.

15. ATARI's representation in staff recruitment and transfer in KVKs of SAUs

ICAR is financing the KVKs under the SAUs/CAUs and no representative from the ATARIs is included in their Selection Committee. It is recommended that the Council may consider revoking of its earlier order in this effect and includes the concerned Director ATARI as one of the Members of the Selection Committee. Similarly, before transferring a Head/SMS of KVK consent of the concerned ATARI may be obtained.

16. KVK scientists may be kept free from activities imposed by the State Governments

The Council may address a communication to the concerned State Governments, that this Institution is having specific mandate and an action plan for implementation, and therefore no activity, which is not as per mandate, be assigned without the approval of the Council.

17. Additional Scientific, Technical and Supporting staff at ATARI Headquarters

Because of increased programmes, along with research component being added, it is recommended to provide additional Scientific, Technical and Supporting staff (Preferably 4 Scientists, 9 technical and 6 supporting) at the ATARI Headquarters.

The QRT is fully convinced and sincerely feels that if the recommendations are effectively implemented and put into action, the KVKs will be instrumental in ensuring food and nutritional security and will become a more effective and vibrant Institution at District level leading to Nation's growth.

Chapter 1

Prologue

1.1. Relevance of KVKs and ATARIs vis-à-vis agricultural extension in India

Agricultural extension in India, agriculture being a state subject, used to be effected primarily through the state departments of agriculture and allied subjects while Indian Council of Agricultural Research (ICAR), the apex agricultural research body in the country, had its own mechanisms of technology transfer through national demonstration projects, operation research projects, lab to land programmes, etc. To bring synergy between the functioning of state extension mechanism and its own programmes, ICAR integrated its extension approaches to form Krishi Vigyan Kendras (KVKs) since 1974 with an eye for science and technology-led growth which may lead to enhanced productivity, profitability and sustainability of agriculture. Thus, KVKs, in harmonization with state functionaries, are envisaging the pivotal point for front line transfer of technologies for all developmental activities related to agriculture and allied aspects in India.

At present there is a robust network of 11 Agricultural Technology Application Research Institutes (ATARIs) and 717 Krishi Vigyan Kendras (KVKs). ATARIs play the role of coordination and monitoring with headquarters at Ludhiana, Jodhpur, Kanpur, Patna, Kolkata, Guwahati, Barapani, Pune, Jabalpur, Hyderabad and Bengaluru. While ATARIs coordinates and monitors the technology application and frontline extension education programmes by KVKs besides strengthening agricultural extension research and knowledge management, KVKs are the ground level establishments whose mission is farmer-centric growth in agriculture and allied sectors through application of appropriate technologies in specific agro-ecosystem perspective.

1.2. Brief about ATARI Kolkata and Patna: Genesis, mandate, responsibilities and growth

1.2.1. Genesis and growth of ATARI Kolkata and Patna

- The Zonal Project Directorate (erstwhile Zonal Coordinating Unit), Zone-II was established in the year 1979 with the specific objective to monitor and evaluate the Lab-to-Land Programmes of ICAR.
- Alongside, it was entrusted with the responsibility to monitor and guide the activities of KVKs which were being established as District Level First Line Agricultural Institutions.

- Initially, the operational jurisdiction of the Unit was spread over West Bengal, Odisha and A & N Islands. In 1991, Bihar was brought under the fold of Zone-II and Odisha was shifted to Zone VII.
- After its initial migratory stints at the campuses of IVRI-ERS Kolkata, BCKV Mohanpur and CRIJAF Barrackpore, the Unit was shifted to NBSS & LUP, Kolkata Campus, in the year 1996.
- The jurisdiction of the Unit was further extended to include the newly created state of Jharkhand in the year 2000. The Unit was upgraded to Zonal Project Directorate in the year 2009. The Directorate moved to its new administrative building in Salt Lake, Kolkata in 2013. Since July 2015, this Directorate has been renamed as **ICAR-Agricultural Technology Application Research Institute Kolkata.**
- Since April, 2017, ICAR restructured the existing 8 zones by forming total of 11 ATARIs by redistributing the states among them. Consequent upon this, the states of Bihar and Jharkhand, which were under the fold on erstwhile Zone II, formed a separate ATARI of Patna with its headquarter at Patna while the states of West Bengal, Odisha and Andaman and Nicobar Islands were again taken together, as prior to 1991, to form ATARI Kolkata with its headquarters at Salt Lake, Kolkata. In all, ATARI Patna has 68 KVKs in two states of Bihar and Jharkhand and ATARI Kolkata has total of 59 KVKs distributed in the two states of West Bengal, Odisha and UT of A&N islands as below,

Table 1.1: State wise status of KVKs under ATARI Kolkata and ATARI Patna

State	No. of KVKs	Types of host institutes						Total
		SAU	ICAR	DU	CU	NGO	SDA	
ATARI Kolkata								
A&N Islands	3	--	3	--	--	--	--	**3**
Odisha	33	31	2	--	--	--	--	**33**
West Bengal*	23	12	4	2	1	3	1	**23**
Total	**59**	**43**	**9**	**2**	**1**	**3**	**1**	**59**
ATARI Patna								
Bihar **	44	22	1	--	16	4	1	**44**
Jharkhand	24	16	3	--	--	4	1	**24**
Total	**68**	**38**	**4**	**--**	**16**	**8**	**2**	**68**

* Four KVKs have come up post 2016 and not included in report of achievements
** Five KVKs have come up in 2018-19 and not included in report of achievements

Table 1.2: Age of KVKs under ATARI Kolkata and ATARI Patna

State	KVK (n)	Within 10 years	11-20 years	20-30years	More than 30 years	Total
ATARI Kolkata						
A&N Islands	3	2	-	1	-	3
Odisha	33	4	18	7	4	33
West Bengal	23	6	12	2	3	23
Total	**59**	**12**	**30**	**10**	**7**	**59**
ATARI Patna						
Bihar	44	7	23	10	4	44
Jharkhand	24	3	17	-	4	24
Total	**68**	**10**	**40**	**10**	**8**	**68**

Table 1.3: Agro-climatic zone (ACZ) wise distribution of KVKs under ATARI Patna and ATARI Kolkata

Zone/State	ACZ	KVK	No. of KVKs
ATARI Kolkata			
West Bengal (23)	Hill	Kalimpong	01
	Terai	Coochbehar, Jalpaiguri	02
	Old Alluvial	Malda-I, Malda-II, Murshidabad-I, Murshidabad-II, Uttar Dinajpur, Dakshin Dinajpur	06
	New Alluvial	Burdwan, Howrah, Hooghly, Nadia-I, Nadia-II, North 24-Parganas-II	06
	Red Lateritic	Bankura, Purulia, Purba Medinipur, Jhargram, Birbhum	05
	Coastal Saline	North 24-Parganas-I, South 24-Parganas-I, South 24- Parganas-II	03
Odisha (33)	North Western Plateau	Sundargarh-I, Sundargarh-II, Deogarh, Sambalpur, Jharsuguda	05
	North Central Plateau	Mayurbhanj-I, Mayurbhanj-II, Keonjhar	03
	North Eastern Coastal Plain	Balasore, Bhadrak	02
	East & South Eastern Coastal Plain	Kendrapara, Khordha, Jagatsinghpur, Cuttack, Puri, Nayagarh, Ganjam-I, Ganjam-II	08
	North Eastern Ghat	Rayagada, Gajapati, Kandhamal	03
	Eastern Ghat High Land	Koraput, Nabarangpur	02
	South Eastern Ghat	Malkangiri	01
	Western Undulating Zone	Kalahandi, Nuapada	02
	Western Central Table	Bargarh, Bolangir, Boudh, Sonepur	04

	Land		
	Mid Central Table Land	Angul, Dhenkanal, Jajpur	03
A&N Islands (3)	Coastal	Port Blair, North and Middle Andaman, Car Nicobar	03
ATARI Patna			
Bihar (44)	North-West Alluvial Plains	Siwan, Gopalganj, Saran, West-Champaran-I, West-Champaran-II, East-Champaran-I, East-Champaran-II, Sitamarhi, Sheohar, Vaishali, Muzaffarpur-I, Muzaffarpur-II, Madhubani-I, Madhubani-II, Darbhanga, Samastipur-I, Samastipur-II	17
	North-East Alluvial Plains	Purnea, Kishanganj, Araria, Katihar, Saharsa, Supaul, Madhepura, Begusarai	08
	South-Bihar Alluvial Plains	Rohtas, Kaimur, Bhojpur, Buxar, Patna, Nalanda, Nawada, Jehanabad, Aurangabd, Gaya-I, Gaya-II, Jamui, Arwal, Munger, Bhagalpur, Lakhisarai, Banka, Sheikhpura, Khagaria	19
Jharkhand (24)	Central and North Eastern Plateau	Dumka, Deoghar, Godda, Pakur, Sahibganj, Hazaribag, Chatra, Koderma, Bokaro, Dhanbad, Giridih, Jamtara, Ramgarh	13
	Western Plateau	Lohardaga, Ranchi, Gumla, Palamu, Garhwa, Latehar, Simdega	07
	South-Eastern Plateau	East Singhbhum, West Singhbhum, Saraikela, Khunti	04

1.2.2. Mandate of ATARIs

- Coordination and monitoring technology application and Frontline Extension Education Programmes
- Strengthening Agricultural Extension Research and Knowledge Management

1.2.3. Roles & Responsibilities of ATARIs

- Formulate, implement, monitor, guide and evaluate the programmes and activities of KVKs.
- Coordinate the work relating to KVKs and ATICs implemented through various agencies such as SAUs, ICAR Institutes, voluntary agencies and development departments.
- Coordinate with Sate/ Central Government Organizations, financial institutions and other organizations for successful implementation of programmes.
- Partnering with Directorates of Extension Education of SAUs in assured technological backstopping to KVKs and appropriate overseeing of KVK activities.
- Strengthening the Directorates of Extension Education of SAUs with financial support.

- Serve as feedback mechanism from the projects to research and extension systems.
- Implementing projects of ICAR like NICRA, Farmer FIRST, ARYA and others
- Maintain close liaison with ICAR headquarter particularly with Division of Agricultural Extension for preparing reports, write ups and other important documents.

1.2.4. Mandate and activities of KVKs

KVKs were envisioned for science and technology-led growth of Indian agriculture to lead to enhanced productivity, profitability and sustainability of agriculture and its mission was to achieve farmer-centric growth in agriculture and allied sectors through application of appropriate technologies in specific agro-ecosystem perspective. Below are the prime mandate and activities of KVKs.

Mandate

Technology Assessment and Demonstration for its Application and Capacity Development

Activities

- On-farm testing to identify the location specificity of agricultural technologies under various farming systems.
- Frontline demonstrations to establish production potentials of technologies on the farmers' fields.
- Training of farmers and extension personnel to update their knowledge and skills in modern agricultural technologies.
- Work as resource and knowledge centre of agricultural technologies for supporting initiatives of public, private and voluntary sector for improving the agricultural economy of the district.
- Provide farm advisories to farmers on marketing of agricultural produce.
- Identify, document and validate selected farm innovations and select suitable ICT for reaching the unreached.
- Produce and make available technological products like seed, planting material, bio agents, young ones of livestock etc to the farmers as per their resources.
- Organizes extension activities to create awareness about improved agricultural technologies.

CHAPTER 2

SWOT analysis

Based on the interactions by QRT with different stakeholders and the futuristic look, this analysis was an exercise for readying the KVK system to meet the emerging challenges and opportunities.

Strengths:

1. KVK as a science based institution at the district level is well recognized at national level.
2. The importance of KVKs has increased over time as credible sources of technology assessment and its frontline transfer.
3. Notable confidence of farmers and other stakeholders on KVK is well established.
4. A multidisciplinary team working in problem-solving mode rather than subject mode.
5. KVK is engaged in technology assessment, its demonstration by blending science with practice.

Weaknesses:

1. Lack of continuous skill upgradation of SMSs for want of training facilities and finance.
2. The service conditions of KVK scientists, in organizations other than ICAR, are not attractive and uniform.
3. Discontentment of KVK personnel due to unlucrative job and large number of activities.
4. Importance of KVK system is not well recognized in case of teaching and research.
5. KVK structure and role has not been appropriately changed with time keeping in view of the likely demand for optimization of limited resources.
6. KVK is not well equipped with technologies to mitigate impending natural calamities.

Opportunities:

1. The increasing demand of food and nutritional security will continue to be a threat to the Nation. The KVKs will have an increased role as 'single-window knowledge and technology delivery system' at the district level.
2. With the present focus on doubling of farmers income and augmenting contribution of agriculture to Nation's GDP, knowledge will be an important component. KVKs as agricultural technology hub can contribute substantially to this end.
3. In order to have an inclusive growth to achieve social justice, KVKs are likely to play pivotal role for income enhancement of agriculture and allied stakeholders of all strata of society.

4. As agriculture is now looked upon as 'business' rather than a way of life, the KVKs are likely to play an important role in developing competitive 'business strategies' for farmers and private business entities at National and International level. Such models are likely to be in demand as Agri-export will get a major fillip for enhanced income and capturing the International markets.

Threats and Challenges:

1. There is a threat to KVK's importance due to emergence of a large number of public and private sector institutions offering specialized crop or commodity based farm advisory services. KVKs have to prepare themselves so as to compete with these Institutions.
2. Fast decline in arable area and changing food consumption pattern in the country will require more production per unit of area and time. KVKs should be in readiness to meet this challenge.
3. It is reported that India will have major challenge of climate change and decrease in foodgrains production by almost 20% by 2050. There is likelihood of challenges to KVKs to come up with profitable income generating technologies on sustainable basis to mitigate and/or adapt to impending climate changes.

Chapter 3

Present QRT and terms of reference

3.1. Composition of QRT

The Secretary, DARE and DG, ICAR vide F. No. A. Extn. 9/19/2019-AE-II dated 19.06.2019 and F. No. A. Extn. 9/19/2019-AE-II dated 25.11.2019 (Annexure I) constituted the present QRT for ATARI Kolkata and ATARI Patna under the Chairmanship of Dr. R. K. Samanta with the following composition,

Table 3.1: Composition of present QRT

Name	Designation	Chair/Member
Dr. R. K. Samanta	Former Vice Chancellor, BCKV, Mohanpur, West Bengal	Chairman
Dr. R. Parshad	Former Assistant Director General, Agril. Extension, ICAR	Member
Prof. C. Satapathy	Former Dean Extension, OUAT, Bhubaneswar	Member
Dr. R. B. Sharma	Former Director of Extension Education, IGKV, Raipur	Member
Dr. Y. V. Singh	Former Director, ICAR-ATARI, Jodhpur	Member
Dr. F. H. Rahman	Principal Scientist, ICAR-ATARI, Kolkata	Member Secretary

3.2. Terms of reference of present QRT

The QRT was ordained with following terms of references,

- To review the KVK programmes and activities and their relevance, keeping in view the identified and prioritized farmers needs of the area.
- To assess the superiority of the technology/products demonstrated on the farmer's fields through on-farm trials and frontline demonstrations.
- To assess the efforts made in transfer of technology through training of farmers and extension personnel, extension activities and production of seeds and planting materials and other technology inputs.
- To evaluate the innovative extension methodology developed and the procedures adopted by the KVKs to prioritize, monitor and assess the impact of programmes.
- To suggest a road map for KVKs to work as single window knowledge, resource and capacity development centre in the district.

- To assess the existing provision for manpower and infrastructure in KVKs and ATARIs in view of their roles and responsibilities; review the monitoring, coordination, overseeing, liasioning, reporting, budgeting, technology flow and backstopping mechanisms; and
- To suggest measures for organizational and administrative changes for strengthening and overall improving the visibility and efficiency of KVK system.

3.3. *Modus operandi* of present QRT

Consequent upon a meeting with DDG (Agril. Extension) and ADGs at ICAR headquarter, work presented by Directors ATARI, Director of Extension Education, Head of KVKs, visit of KVKs, interaction with farmers and different stakeholders work reviewed by team. The recommendation of earlier QRT was also reviewed (Annexure II) to have an insight into evaluation of KVK activities carried out earlier so as to evaluate the progress and prepare recommendation. Travel workshop was organized between July 2019 to January 2020.

The QRT followed a defined structure for each travel workshop as stated below:

- Presentation by Director ATARI, Director of Extension Education and Heads of each KVKs.
- Presentation of KVK visited during workshop.
- Interaction with Heads of KVKs, heads of host organizations of KVKs, line departments, officials, FPO members, lead bank officials, farmers/entrepreneurs and others.
- Project Director, ATMA of KVK districts, NABARD officials have also participated.
- State Directors, SAMETI have provided their inputs at University headquarter.
- Meeting was held with Vice-Chancellors of SAUs, Directors, ICAR organizations and Heads of NGO KVKs during travel workshop.
- The QRT also visited demonstration plots, farmers' field, SHG centres, farmers club and infrastructure of KVKs.

3.3.1. The review process

- The review process of the QRT started on 19.07.19 with an inaugural meeting at ICAR-ATARI Kolkata where Directors of both the ATARIs, i.e., ATARI Kolkata and ATARI Patna were present along with the Directors of Extension Education of BCKV, Mohanpur; UBKV, Coochbehar; WBUAFS, Kolkata from West Bengal, Dean Extension, OUAT from Odisha, Directors of Extension Education from BAU, Sabour and RPCAU, Pusa from Bihar and Directors of Extension Education of BAU, Ranchi from Jharkhand and all the scientists of ATARI Kolkata. In the meeting, Directors

of both the ATARIs presented an overview of their respective ATARI's while all DEEs briefed the QRT about the KVKs and their working under their respective control.

- It was decided that the QRT will review the KVKs host institution wise and subsequently, Member Secretary, QRT finalized the visit schedule with concurrence of the Chairman and Members of QRT. Besides, the format for the report to be submitted was also blue printed.
- It was decided that KVKs under ATARI Kolkata will be visited first followed by those under ATARI Patna. Afterwards, host institution wise list of selected KVKs were finalized in consultation with the Directors of ATARIs and DEEs.
- QRT emphasized that the KVKs to be visited must ensure the presence of various stakeholders related to agriculture and allied aspects in the District, *viz.,* Line department and ATMA officials, NABARD, entrepreneurs, lead farmers and notable NGO personnel, FPOs, press/media to take part in interaction and suggest means for betterment of KVK functioning and more meaningful convergence among the KVK and the stakeholder towards the end of improvement of agricultural scenario of the district.
- After rigorous travelling, starting from August, 2019, and scrupulous scrutiny the review of the KVKs of the Zones concluded in January, 2020.
- Finally, the ATARIs were reviewed in the finalization workshop for the review exercise organized at ATARI, Kolkata with presence of all concerned from 06.02.2020 to 08.02.2020.

3.3.2. Travel workshops

The QRT visited selected KVKs in the four states and one UT in both the ATARIs and workshops were organized at the KVKs to be visited or other selected suitable venues where, apart from the KVK under visit, other nearby KVKs participated and presented their report before the Committee which were scrupulously scrutinized by the Team. Below is presented the brief travel schedule of the QRT in ATARI Kolkata and Patna. Detailed schedule of activities in travel workshops is given in Annexure III.

Table 3.2 ATARI and State wise travel schedule for review

Sl. No.	State/UT	Date	Venues
ATARI Kolkata			
1	WB	**Phase I:** 19.07.19 – 20.07.19	ATARI Kolkata; BCKV; Nadia KVK; NDRI ERS, Kalyani
		Phase II: 19.08.19 – 25.08.19	WBUAFS, Belgachia; North 24- Pgs KVK; South 24-Pgs-II Narendrapur KVK; RK Mission, Narendrapur; Uttar Dinajpur KVK; UBKV and Coochbehar KVK; Jalpaiguri KVK
2	Odisha	**Phase I:** 05.09.19 – 09.09.19	OUAT, Bhubaneswar; Khorda KVK; Jharsuguda KVK; Bargarh KVK; Sonepur KVK; Angul KVK; Dhenkanal KVK
		Phase II: 26.09.19 – 30.09.19	Bhadrak KVK; Balasore KVK; Puri KVK; OUAT Bhubaneswar
3	A & N	01.11.19 – 05.11.19	CIARI, Port Blair; Port Blair KVK
ATARI Patna			
4	Bihar	**Phase I:** 21.11.19 – 26. 11.19	ATARI, Patna; BAU, Bhagalpur; BPSAC, Purnea; Dr. Kalam Agricultural College, Kisangunj KVK; Purnea KVK; Bhagalpur KVK; Lakhisarai KVK; Nalanda KVK; Gaya KVK
		Phase II: 09.12.19 – 13.12.19	BASU, Patna; RPCAU, Pusa; Muzaffarpur KVK; East Champaran KVK; Samastipur KVK; Vaishali KVK
5	Jharkhand	05.01.20 – 11.01.20	BAU, Ranchi; Divyana KVK, Ranchi; Gumla KVK; Lohardaga KVK; Hazaribag KVK; Deoghar KVK

3.3.3. Visit of KVKs and adopted villages

During the travel workshop to the four states and Union Territory under ATARI Patna and Kolkata, the QRT visited designated villages and met other stakeholders either in the villages or in the KVK premises. Unvaryingly the QRT apprised themselves of the implementation of technologies by the KVKs in the farmers fields followed by comprehensive discussion with the farmers present to gauge the tangible benefit ensued to them by the efforts of the KVKs. In the KVK premises, as mentioned earlier, the QRT saught the opinion of farmers' group leaders, farm-women and other stakeholders like District level officials of line departments, members of Farmer Producer Organization/Company and others to have an inclusive view of the effects of KVK activities carried out during last eight years. Discussions were also held about the role and expectations of farmers, farm-women, rural youths from KVKs and KVK scientists. The QRT in each visit to KVKs, critically assessed the infrastructure of the KVKs as well as its extent of cultivable areas. Through the discussion with all the stakeholders, the QRT critically ascertained the degree and nature of convergence with line departments and other players in rural development in the district.

Chapter 4

Issues pertaining to KVKs

4.1. Staff position

Overall, staff position of KVKs under the two ATARIs is a major constraint in proper functioning of the KVKs. In order of making the KVKs more effective and effectual in discharging its duties and responsibilities for the cause of the farming community and other clientele groups of any given district, the requirement of adequate as well as qualified manpower is the pre-requisite.

Overall, the QRT noted that there is shortfall in respect of staff in the KVKs.

Table 4.1: ATARI and state wise staff position in KVKs

Name of Zone/State	Sr. Scientist and Head			SMS			Asst./FM/ Steno			Supporting (Driver/Peon/ Cook)			Total		
	S	F	%V	S	F	%V	S	F	%V	S	F	%V	S	F	%V
ATARI Kolkata															
A&N	3	1	67	18	12	33	15	7	53	12	7	42	48	27	44
Odisha	33	27	18	198	142	28	165	108	35	132	129	2	528	406	23
West Bengal	23	19	17	138	89	36	115	72	37	92	69	25	368	249	32
Total	**59**	**47**	**20**	**354**	**243**	**31**	**295**	**187**	**37**	**236**	**205**	**13**	**944**	**682**	**28**
ATARI Patna															
Bihar	44	32	27	234	168	28	195	168	14	156	76	51	**624**	**432**	**31**
Jharkhand	24	8	67	144	92	36	120	53	56	96	26	73	**384**	**180**	**53**
Total	**68**	**40**	**41**	**378**	**260**	**31**	**315**	**221**	**30**	**252**	**102**	**60**	**1008**	**612**	**39**

S: Sanctioned, F: Filled up, %V: Percentage vacant

Table 4.2: ATARI wise staff position

Name of Zone/State	Director			Scientific position			Administrative positions			Supporting (Driver/Peon/ Cook)			Total		
	S	F	%V	S	F	%V	S	F	%V	S	F	%V	S	F	%V
ATARI Kolkata	1	1	0	6	6	0	8	4	50	3	2	33	18	13	28
ATARI Patna	1	1	0	2*	1	50	0	0	0	0	0	0	3	2	66

* Through cadre review on transfer basis; S: Sanctioned, F: Filled up, %V: Percentage of vacancy

Observations by QRT:

Specific observations made by the QRT on information collected from al the 127 KVKs of both the ATARIs covering the states of Bihar, Jharkhand, West Bengal, Odisha and Union Territory of A&N Islands is given below, ATARI wise,

ATARI Kolkata

- KVKs under ATARI Kolkata have a relative scarcity of staff (Table 4.1) for carrying out the mandated activities and additional responsibilities thrust upon the KVKs from time to time by different organizations. Although, 47 out of 59 Head positions in the KVKs under ATARI Kolkata are filled up, about 31 % of the SMSs are not in position. Vacancy position as regard Assistant/Farm Manager/Stenographer is as high as 37%. However, most of supporting staff (87 %) are in place. ***Overall, about 30% of the total sanctioned strength is lying vacant in the KVKs under ATARI Kolkata.*** Observation of QRT for state wise staff scenario is as below,
- Staff position for West Bengal KVKs in respect of scientists and others have been observed fairly adequate. While 19 out of 23 positions of Heads are filled up, about 69 % SMSs are in position and about 1/3rd of other staff are not in position.
- In case of Odisha, most of the KVKs (31 out of 33) are with OUAT, Bhubaneswar and staff positions are highly deficient. Director ATARI, Kolkata is advised to pursue the matter with Vice-Chancellor of OUAT, Bhubaneswar to fill up all the vacant posts as early as possible. However, QRT noted that in some of the KVKs interviews has been held and posts are likely to be filled shortly.
- As for Andaman and Nicobar KVKs (3 nos.), all are under the jurisdiction of ICAR-CIARI, Port Blair. Even the posts of Heads/SMSs are lying vacant. ICAR have to take immediate action to fill up the post. It was informed by Director, ATARI that ASRB, Delhi is streamlining the issues and posts will be filled in due course of time. In general, it was noted with dismay that positions of SMSs in most of the ICAR KVKs are lying vacant or yet to be filled up in case of newly established KVKs.
- ATARI Kolkata office, since established long back, although stands in a much better position compared to ATARI Patna (Table 4.2), has also shortage of staff which affect monitoring of each KVK to guide them in implementing the KVK mandate efficiently. All the scientific positions including that of Director are in position, although, half of the administrative positions in the ATARI Kolkata are vacant. Team advised the Director of Kolkata to take up the matter with DDG (AE) and ICAR to fill up the posts.
- Because of increased programmes, along with research component being added, it is recommended to provide additional technical and supporting staff (Preferably 4 Scientific, 9 technical and 6 supporting) at the ATARI Kolkata.

ATARI Patna

- KVKs under ATARI Patna have a relative dearth of scientific staff (Table 4.1). Overall 41 % of the Head positions are lying vacant while 31% SMSs are not in position. Regarding Assistant/Farm Manager/Stenographer and supporting staff Jharkhand cuts a sorry figure (56% and 73% vacant, respectively) while Bihar is in better position as regard Asst./FM/Steno (14% vacant) although total number of supporting staff is inadequate. ***Overall, 39% of the total sanctioned posts in KVKs under ATARI Patna are lying vacant to this date.*** Host wise staff scenario in KVKs under ATARI Patna is as below,
- In case of Bihar, BAU, Bhagalpur took it seriously and posts are being filled. However, shortfall in staff noticed. Director of Extension Education, BAU, Bhagalpur assured the QRT that posts will be filled very shortly upon getting finance approval for additional expenses towards salary of staff from State Govt.
- In RPCAU, Pusa, Samastipur inadequate staffs have been observed. Since it is Central Agricultural University, all the posts will be filled as assured by Director of Extension Education and VC, RPCAU, Pusa.
- In Jharkhand, some of the NGO KVKs have adequate staff except one or two posts lying vacant. But, BAU, Ranchi is yet to fill up many posts of scientists and other staff. Frequent transfer is also hampering the performance of KVKs. Previous QRT has also made similar remark in their report. And it was advised not to transfer the scientists before 6 years of assignment at one place. Present QRT also recommends it and also is of the view that transfer may be taken place with the consent by Director ATARI, Patna, henceforth.
- As for ATARI Patna office itself, It was created in 2017 and all the posts, except Director, are yet to be filled (Table 4.2). ATARI Patna engaged contractual staff in various projects to look after the work. The building of ATARI Patna is under construction and is likely to be completed in few months. Presently they are sitting of old building provided by ICAR-CPRS, Patna.
- Because of increased programmes, along with research component being added, it is recommended to provide additional technical and supporting staff (Preferably 4 Scientific, 9 technical and 6 supporting) at the ATARI Patna.

  QRT observed that in case of recruitment of Scientific staff in SAU KVKs, ATARI Director or his Nominee is not being associated in the selection committee as per Council's Office Memorandum No. (1)/96-AE-I (Pt. I) dated 17.06.2005. Also, SMSs under SAUs are transferred keeping ATARI in dark which the QRT felt not justified, pertaining to the fact that ICAR is fully financing the KVKs.

4.2. Budgetary provisions

The report submitted by both the ATARIs revealed that all sorts of funds were released and utilized timely during the period under report. However, many of the KVKs under SAUs and NGO have a general complaint of funds not being released to KVKs in time. Hence, committee recommends the head of the host institution to release the funds timely in order that the mandated activities may not be disturbed.

On the other hand, many KVKs (new) have to get money for construction of office, residential building and demo unit. In many of the KVKs, vehicles need replacement and old buildings need repairing and maintenance, as they were leaking during rainy period. In many of the KVKs training halls were small. It is advised that new training halls may be constructed. Directors of Extension Education of different SAUs have been advised to prepare the list of buildings to be constructed or renovated, vehicles to be purchased and submit to the Directors, ATARI for further expedition of job.

Budgetary provision made by ICAR to ATARI Kolkata and Patna during the period under report and their subsequent disbursement to KVKs and Directorates of Extension Education are given in following tables (Tables 4.3 to 4.9),

ATARI Kolkata

Table 4.3: State wise budget provision for KVKs under ATARI Kolkata

State	Year	Capital	Salary	General	Total	Amount/ KVK/Year
A&N Islands	2011-12	33.8	132.1	14.5	**180.4**	**180.4**
Odisha		412.49	936.05	215.88	**1564.4**	**53.94**
West Bengal		271.78	940.9	165.7	**1378.4**	**81.08**
Total		**718.07**	**2009.1**	**396.08**	**3123.2**	**315.42**
A&N Islands	2012-13	2.5	133.41	26	**161.91**	**161.91**
Odisha		90.82	1207.06	275.18	**1573.1**	**54.24**
West Bengal		6.5	1025	235.55	**1267.1**	**74.53**
Total		**99.82**	**2365.5**	**536.73**	**3002**	**290.68**
A&N Islands	2013-14	0	154	28.45	**182.45**	**60.82**
Odisha		108.39	1322.76	382.95	**1814.1**	**54.97**
West Bengal		9.5	1122.75	244.65	**1376.9**	**80.99**
Total		**117.89**	**2599.5**	**656.05**	**3373.5**	**196.78**
A&N Islands	2014-15	0	181.5	26.65	**208.15**	**69.38**
Odisha		15.41	1407.84	350.46	**1773.7**	**53.75**
West Bengal		0	1309.36	174.17	**1483.5**	**87.26**
Total		**15.41**	**2898.7**	**551.28**	**3465.4**	**210.39**
A&N Islands	2015-16	14.9	230	44	**288.9**	**96.3**
Odisha		370.6	1711.06	463.03	**2544.7**	**77.11**
West Bengal		143.79	1566.73	303.4	**2013.9**	**118.46**
Total		**529.29**	**3507.8**	**810.43**	**4847.5**	**291.87**

State	Year	Capital	Salary	General	Total	Amount/ KVK/Year
A&N Islands	2016-17	34.69	264.75	81.5	**380.94**	**126.98**
Odisha		848.09	1793.47	473.05	**3114.6**	**94.38**
West Bengal		647.13	1589	482.86	**2719**	**129.48**
Total		**1529.9**	**3647.2**	**1037.4**	**6214.5**	**350.84**
A&N Islands	2017-18	12.5	334.65	69.3	**416.45**	**138.82**
Odisha		171.65	2026.79	623	**2821.4**	**85.5**
West Bengal		460.11	1843.26	437	**2740.4**	**119.15**
Total		**644.26**	**4204.7**	**1129.3**	**5978.3**	**343.47**
A&N Islands	2018-19	80	338	41.75	**459.75**	**153.25**
Odisha		393.67	2577.17	396.45	**3367.3**	**102.04**
West Bengal		243.78	2125.54	298.2	**2667.5**	**115.98**
Total		**717.45**	**5040.7**	**736.4**	**6494.6**	**371.27**
Total for 8 years		**4372.10**	**26273.15**	**5853.68**	**36498.93**	
Total - A&N		178.39	1768.41	332.15	**2278.95**	
Total - Odisha		2411.12	12982.20	3180.00	**18573.32**	
Total - WB		1782.59	11522.54	2341.53	**15646.66**	

(Rs. In Lakhs)

Table 4.4: Budget provision for ATARI Kolkata office

Year	ATARI Kolkata Office			
	Heads of expenditure			Total
	Salary	General	Capital	
2011-12	81.00	28.00	63.06	**172.06**
2012-13	106.00	24.25	0.00	**130.25**
2013-14	140.00	35.50	26.00	**201.50**
2014-15	168.00	36.50	14.47	**218.97**
2015-16	175.00	50.00	7.96	**232.96**
2016-17	180.00	69.05	41.81	**290.86**
2017-18	273.72	136.20	2.20	**412.12**
2018-19	364.10	76.36	11.70	**452.16**
Total for 8 years	**1487.82**	**455.86**	**167.20**	**2110.88**

(Rs. In Lakhs)

Table 4.5: Budget provision for strengthening of DEEs of SAUs under ATARI Kolkata

SAU	Year								Total
	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	
BCKV, WB	10.20	5.70	10.70	7.50	7.75	10.75	13.25	9.00	**74.85**
UBKV, WB	9.25	8.85	7.60	3.00	7.75	10.50	21.00	13.00	**80.95**
WBUAFS, WB	55.01	2.50	7.70	4.00	5.40	10.50	20.50	11.50	**117.11**
OUAT, Odisha	7.08	6.95	8.85	7.61	10.25	12.79	25.00	20.00	**98.53**
Total	**81.54**	**24.00**	**34.85**	**22.11**	**31.15**	**44.54**	**79.75**	**53.50**	**371.44**

(Rs. In Lakhs)

ATARI Patna

Table 4.6: State wise budget provision for KVKs under ATARI Patna

State	Year	Capital	Salary	General	Total	Amount/ KVK/Year
Bihar	2011-12	684.73	1411.12	284.70	**2380.55**	**62.65**
Jharkhand		315.89	1378.86	177.67	**1872.42**	**89.16**
Total		**1000.62**	**2789.98**	**462.37**	**4252.97**	**151.81**
Bihar	2012-13	37.50	1630.70	429.60	**2097.80**	**55.21**
Jharkhand		56.59	987.25	241.15	**1284.99**	**61.19**
Total		**94.09**	**2617.95**	**670.75**	**3382.79**	**116.4**
Bihar	2013-14	231.82	1990.84	471.95	**2694.61**	**70.91**
Jharkhand		38.50	1082.24	294.80	**1415.54**	**67.41**
Total		**270.32**	**3073.08**	**766.75**	**4110.15**	**138.32**
Bihar	2014-15	8.00	2287.64	289.83	**2585.47**	**68.04**
Jharkhand		8.04	1184.50	221.84	**1414.38**	**58.93**
Total		**16.04**	**3472.14**	**511.67**	**3999.85**	**126.97**
Bihar	2015-16	127.70	2610.02	565.50	**3303.22**	**86.93**
Jharkhand		205.65	1281.25	367.10	**1854.00**	**77.25**
Total		**333.35**	**3891.27**	**932.60**	**5157.22**	**164.18**
Bihar	2016-17	593.66	2715.03	1081.10	**4389.79**	**112.56**
Jharkhand		265.51	1443.22	600.74	**2309.47**	**96.23**
Total		**859.17**	**4158.25**	**1681.84**	**6699.26**	**208.79**
Bihar	2017-18	119.00	3150.88	712.73	**3982.61**	**102.12**
Jharkhand		0.00	1504.33	413.66	**1917.99**	**79.92**
Total		**119.00**	**4655.21**	**1126.39**	**5900.60**	**182.04**
Bihar	2018-19	390.41	3297.53	527.58	**4215.53**	**95.81**
Jharkhand		129.00	1596.56	548.74	**2274.30**	**94.76**
Total		**519.41**	**4894.10**	**1076.32**	**6489.83**	**190.57**
Total for 8 years		**3212.00**	**29551.98**	**7228.69**	**39992.66**	
Total - Bihar		**2192.82**	**19093.76**	**4362.99**	**25649.57**	
Total - Jharkhand		**1019.18**	**10458.21**	**2865.70**	**14343.09**	

(Rs. In Lakhs)

Table 4.7: Budget provision for ATARI Patna office

Year	ATARI Patna Office			
	Heads of expenditure			Total
	Salary	General	Capital	
2017-18	40.00	16.93	250.90	307.83
2018-19	40.00	35.00	73.00	148.00
Total for 2 years	**80.00**	**51.93**	**323.90**	**455.83**

(Rs. In Lakhs)

Table 4.8: Budget provision for strengthening of the DEEs of SAUs under ATARI Patna

SAU	Year								Total
	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	
RPCAU, Bihar	67.24	9	9.5	5	9.75	16.25	10	8.2	**134.94**
BAU, Sabour, Bihar	-	12.5	16.5	12.51	14.75	51.5	46.38	59.19	**213.33**
BAU, Ranchi	13	8.6	21.7	12	11.5	19.75	7.76	7	**101.31**
BASU, Patna	-	-	-	-	-		-	-	
Total	**80.24**	**30.1**	**47.7**	**29.51**	**36**	**87.5**	**64.14**	**74.39**	**449.58**

(Rs. In Lakhs)

Table 4.9: ICAR and Non-ICAR fund flow in the KVKs during the period under report

State	KVK (no.)	ICAR	Non-ICAR	Total	Fund Flow of Non-ICAR : ICAR
ATARI Kolkata					
A&N	3	2278.95	185.29	2464.24	**0.08:1**
Odisha	33	18573.32	2750.56	21323.88	**0.15:1**
West Bengal	23	15646.66	9129.70	24776.36	**0.58:1**
Total	**59**	**36498.93**	**12065.55**	**48564.48**	**0.33:1**
ATARI Patna					
Bihar	44	25649.57	2553.41	28202.98	**0.10:1**
Jharkhand	24	14343.09	2807.79	17150.88	**0.20:1**
Total	**68**	**39992.66**	**5361.20**	**45353.86**	**0.13:1**

(Rs. In Lakhs)

Observations by QRT:

Based on extensive discussion with KVK Heads, QRT made following observations,

- Salary and allowances, although adequate, release at times not being timely, KVK personnel's salary is delayed. ICAR may ensure timely release of salary.
- Recommendation of 7th CPC, apart from ICAR KVKs, is yet to be implemented in all other types of host organization generating discontent among officials and loss of harmony among KVKs. ICAR should take necessary action not to cause further delay in implementation of 7th CPC for all KVKs.
- Release of fund for flagship programmes, like CFLD, at times being delayed, KVKs are finding it difficult to conduct the same timely.
- Non receipt of budget after conduction of programmes.
- For the KVKs which are more than 10 years old, ICAR should make provisions for additional funding for repair and renovation of existing infrastructures.
- It was noted by the QRT that all the DEEs are satisfactorily utilizing the allocated fund except for BCKV, Mohanpur which was noted to be lagging in utilization.

4.3. Human resource development (HRD) of KVK personnel

In order that KVK personnel appropriately upgrade the knowledge and skills of different stakeholders, *viz.,* practicing farmers and farm women, extension officials and rural youths, they require to keep themselves abreast with the latest research developments in agriculture in the numerous ICAR research institutions and universities across the country. It entails that KVK personnel must get exposure, *per se*, to these developments on a regular basis through participating in HRD programmes like summer/winter schools, workshops/seminars/conferences/symposia, short and medium duration trainings, etc. Apart from boosting their knowledge in so doing, these programmes provide the KVK personnel for exchange of thoughts and naturally broaden their perception about the mode of working in other parts of the country and in turn augment their capacity to innovate in performing their duties.

Below is given a synopsis of the HRD programmes participated by KVK personnel,

Table 4.10: HRD programmes attended by KVK personnel

Year	ATARI Kolkata			ATARI Patna		Total
	A&N Islands	Odisha	West Bengal	Bihar	Jharkhand	
2011-12	1	65	74	8	56	**204**
2012-13	2	59	124	23	76	**284**
2013-14	2	102	142	89	111	**446**
2014-15	2	100	116	104	118	**440**
2015-16	2	85	122	106	128	**443**
2016-17	2	74	116	120	85	**397**
2017-18	3	86	136	139	120	**484**
2018-19	3	114	142	129	137	**525**
Total	**17**	**685**	**972**	**718**	**831**	**3223**
Avg/Yr	**2.1**	**85.6**	**121.5**	**89.8**	**103.9**	
Avg/KVK/Year	**1.1**	**2.9**	**6.1**	**2.4**	**4.3**	

Table 4.11: HRD programmes conducted by ATARI Kolkata

Year	Review workshop		HRD (Training/Orientation)		Total	
	No. of prog.	Participants	No. of prog.	Participants	No. of prog.	Participants
2011-12	11	430	3	103	**14**	**533**
2012-13	10	352	11	310	**21**	**662**
2013-14	14	660	2	61	**16**	**721**
2014-15	23	866	4	167	**27**	**1033**
2015-16	15	662	2	98	**17**	**760**
2016-17	20	725	1	40	**21**	**765**
2017-18	11	418	2	132	**13**	**550**
2018-19	8	443	6	238	**14**	**681**
Total	**112**	**4556**	**31**	**1149**	**143**	**5705**

Table 4.12: HRD programmes conducted by ATARI Patna

Year	Review workshop		HRD (Training/Orientation)		Total	
	No. of programmes	Participants	No. of programmes	Participants	No. of programmes	Participants
2017-18	8	460	2	77	**10**	**537**
2018-19	10	388	8	343	**18**	**731**
Total	**18**	**848**	**10**	**420**	**28**	**1268**

Observations made by QRT:

- As per information gathered by the QRT, the status of participation of KVK officials in HRD programmes need to be further improved. Except for West Bengal KVKs, where average of 6.1 personnel have underwent HRD training per year per KVK, Bihar and Odisha KVKs are lagging behind with respective figures of 2.4 and 2.9 per year per KVK (Table 4.10).
- The case of A&N islands (1.1 per year per KVK) is understandable for its geographical disadvantage (Table 4.10).
- Jharkhand KVKs (4.3 per year per KVK), although fair, should further encourage its officials to undergo such trainings (Table 4.10).
- As for the HRD programmes conducted by the ATARIs like workshop, review meeting, training/orientation programmes, ATARI, Kolkata has done good job through various programmes to develop the skill of KVK staff from time to time. ATARI Patna, began from 2017 is also doing its job in collaboration with the universities. Hopefully, ATARI Patna will render full-fledged services on this aspect after completion of building and other infrastructures (Table 4.11 & 4.12).

4.4. Infrastructure and facilities available

In order that KVKs to be showcased as resource, technology and knowledge hub in the districts, creation of all round infrastructural facility is a *sine qua non.* Apart from keeping administrative building and training hostel in sound shape, KVKs must maintain suitable demonstration units in fully functional mode which not only would increase its visibility and amplify farmers foot fall in the KVK, but is instrumental in enhancing farmers perception and confidence on the KVK and enthuse them to adopt the profitable technologies to the cause of enhancing their livelihood and income.

An overall assessment made by the QRT on the availability of infrastructure for executing the mandated activities of KVKs is summarized below,

a) Minimal processing facility

Around 4 KVKs of West Bengal and some of the Bihar, Odisha and Jharkhand are involved in seed processing and seed production to provide quality seed material to farmers. Such activities are needed in other KVKs also. It is also felt that more farmers may be collaborated with and these farmers should be provided foundation seed by seed company and may be linked with the processing unit to produce more quality seed. Already seed villages have been formed by line department with the interactive of KVKs.

b) Portable carp hatchery

Portable carp hatchery was advised by preceding two QRTs in the states of West Bengal and Odisha. KVKs of Bihar also developed innovative carp hatchery system to promote fishery and prawn production. It was advised by the QRT that these KVKs may be linked with National Fisheries Development Board, Hyderabad for providing fund to conduct training and demonstration. It is still in preliminary stage. It needs further strengthening and initiation in potential KVKs selected in each state.

c) Plant diagnostic labs

Plant diagnostic labs have been provided to many KVKs to analyze the plant leaf samples for macro/micro nutrient deficiency, disease pest infestation to provide curative measures timely. These are not well utilized owing to staff deficiency or transfer of staff in many of the KVKs. Again attention has to be given and more KVKs may be brought under such faculty to help the farmers in each district.

d) Rainwater harvesting structure with micro-irrigation

Rainwater harvesting system with micro-irrigation, established by many KVKs situated in upland area of West Bengal, Odisha, Bihar and Jharkhand, have shown the potential of harvesting and using rainwater during drought period. However, their impact at farmers' field is not up the mark. Tribal areas of Jharkhand & Odisha need intensification of such technology to combat drought due to climate change. Gumla and Ranchi KVK have done excellent work while Lohardaga has yet to exploit this area. University may look into the matter.

e) Soil and Water testing labs

Many of the KVKs of Kolkata and Patna zone have been provided such labs to analyze soil and water samples. It is evident from the report from 2011-12 to 2018-19, that almost all the KVKs have analyzed soil and water sample of farmers. But output is little slow in some of the KVKs due to non availability of lab attendant or scientist from the discipline of soil science or agronomy. Attention is needed on this aspect by the host organization.

4.4.1. ATARI Kolkata

As for Andaman and Nicobar Islands under ATARI Kolkata, 1 out of 3 KVKs are fully equipped with requisite infrastructural facilities. About 21% and 26% KVKs are not having administrative building in the states of Odisha and West Bengal, respectively while 23% and 30% KVKs are yet to have farmers hostel, respectively. Around 60% of KVKs have soil testing facilities. As for demonstration units, the state of West Bengal stands in a better place compared to Odisha. While Odisha KVKs have about 3.5 units per KVK, West Bengal KVKs are having about 6.4 units per KVK (Table 4.13).

4.4.2. ATARI Patna

However, about 20% of KVKs under ATARI Patna, those have been working for more than 5 years, are yet to have administrative building while 17% and 31% are not having farmers hostel and staff quarters, respectively. About 64% of the KVKs are having soil testing facilities. As for demonstration units, both the states of Bihar and Jharkhand are having about 5 units per KVK. One grey area is not having minimal processing facilities in most of the KVKs. About 75% KVKs are not having the processing facilities (Table 4.13).

Table 4.13: Status of Infrastructure facilities

S. No.	State/ UT	No of KVKs	Land *		Admn Bldg.	Farmers Hostel	Staff Qtrs	Fencing	Processing facility	Soil lab	Demo. units*
			< 10 ha	>10 ha							
ATARI Kolkata											
1	A & N Islands	3	3	0	1	1	1	1	1	0	5
2	Odisha	33	2	31	26	25	18	14	21	20	116
3	West Bengal	23	4	19	17	16	13	14	17	16	147
Total		**59**	**9**	**50**	**44**	**42**	**32**	**29**	**39**	**36**	**268**
ATARI Patna											
1	Bihar	39	3	36	35	33	32	16	11	24	196
2	Jharkhand	24	2	22	18	19	11	10	4	16	126
Total		**63**	**5**	**58**	**51**	**52**	**43**	**26**	**15**	**40**	**322**

* As per Revised guidelines for KVK (High power committee report)*(RWH structure, Piggery, Dairy, Poultry, Goatary, Mushroom production unit/Lab, Shade house/poly house, Soil test Lab, hatchery etc.)

Observations by QRT:

- QRT after through visit of KVKs and from the individual reports inferred that it was a mixed bag in so far as availability of infrastructural facilities in the KVKs is concerned, although overall the availability of infrastructure was close to satisfactory.

- Requisite area of land of 10 ha (as per high power committee guidelines for KVKs in 2015) is available with 84% of KVKs under ATARI Kolkata and 92% in case of ATARI Patna.
- QRT suggests that since KVKs work with the principle of "Seeing is believing", KVK farm should be kept in proper shape and first-rate demonstration units, as many as possible, should be constructed to enthuse farmers in adoption of the technology.

4.5. Service conditions of KVK personnel - Inter-Host organization variability

As per discussion with KVKs and ATARIs, and based upon the information collected by the QRT, there appears to exist perceptible inter-host organization variability among the KVKs in so far as their service conditions are concerned although they are executing the same mandated activities. Observations made by the QRT are laid out below,

- Head, KVKs in some of the NGOs and KVKs of OUAT are not given designated scale of pay of Sr. Scientist. All Heads of KVK must be treated at par with Head of ICAR KVKs and their career advancement schemes must be similar to ICAR KVK Heads.
- There is disparity in pay and designation of SMSs working in KVKs under different Host organization. While, SMSs in ICAR KVKs, being classified under Technical cadre, are given pay scale at par with technical personnel with starting GP of Rs. 5400/- (6th CPC), SMSs in some SAUs and some NGOs are given Scientist/Asst. Professor academic grade pay of Rs. 6000/-. Since KVK SMSs are performing activities at par with Scientist (Extension) of mainstream ICAR organizations, ICAR should take requisite action to make SMSs at par with Scientists of ICAR with similar promotional opportunities and designate them as Scientist.
- There exist disparity in other service benefits like pension, gratuity, leave salary, etc. among the KVKs. While ICAR KVK personnel are entitled to all these benefits, being at par with mainstream ICAR personnel, officials in other KVKs are, by and large, deprived of these benefits.
- ICAR should strive to make service conditions for all KVK personnel, irrespective of host organization, similar and at par with mainstream ICAR personnel so as to attract and retain qualified personnel in the KVK system.

4.6. Non-mandated activities of KVK

The QRT noted with some dismay that as KVKs are getting unprecedented appreciation and recognition in so far as agricultural technology extension is concerned, both nationally and internationally, there is a downside of it. Nationally, the more the system is becoming the apple of the eye of Government; the more it is being overburdened with tasks and activities which are

beyond the regular mandate of KVK. The KVKs, with sub-optimal manpower and infrastructure, are already finding it difficult to disburse the ever increasing mandated functions entrusted upon them by ICAR as well as Department of Agricultural Cooperation and Farmers Welfare, Govt. of India, like, increased number of demonstrations, which were earlier being executed through state machineries, providing soil health cards to farmers, more numbers of long duration skill development programmes, webcasting of various government programmes, launching of campaigns, etc.

The QRT is apprehensive that if this trend continues, although quantity wise KVK's activity may appear green on paper, quality wise it may turn grey, as the quality of their services rendered for the farming community is bound to deteriorate because of paucity of time. Besides, funding for these non-mandated activities are often not made provision for which unduly creates crunch on KVKs meager working capital, i.e., the contingency expenses.

The QRT, in this connection, recommends the followings,

- KVKs must not be unduly pressurized to accomplish these non-mandated activities and should be allowed to take care of their mandated functions scrupulously.
- The activities like Krishi Kalyan Abhiyan, seed hub, large number of clustered demonstrations under NFSM and NMOOP, webcasting, launching programmes, etc. should be done through state functionaries, being well equipped with manpower, as was being done earlier. KVK may provide expert support for these activities instead of actively executing it devoting huge man days thereby hampering achievement of their regular activities.
- Agriculture being a state subject, all central sector agricultural schemes, like, ATMA, RKVY, BGREI, CFLDs, etc. is executed through state machineries. In case the above mentioned non-mandated activities are to be done through KVKs, partly or exclusively, sufficient fund from the schemes like ATMA, RKVY should be diverted to KVKs for engaging additional manpower to perform these activities meticulously.

4.7. Perception of host organization towards betterment of working of KVKs

KVK's in the two ATARIs being operational under different host organization whose mode of handling of the KVKs being in variance, perception of the parent organization, as realized by the QRT, is of crucial significance towards betterment of working of the KVKs. The QRT gathered information from different host organizations, the summary of which, host organization type wise is enumerated hereafter,

Universities (OUAT, Bhubaneswar; BAU, Sabour; RPCAU, Pusa; BASU, Patna; BAU, Ranchi; BCKV, Mohanpur; UBKV, Coochbehar; WBUAFS, Kolkata)

- Uniformity in the KVK system irrespective of host organization in terms of promotion of staff, gratuity, leave encashment etc. is to be ensured from the ICAR to make the KVK more vibrant and resourceful organization at district level.
- KVK should have Farm Innovation Resource Management center and Agricultural Technology Information Centre
- Establishment of an agro-processing complex for value addition of fruits, vegetables, medicinal and aromatic plants.
- Establishment of a model Agro Service Centre and Engineering Workshop to promote farm mechanization in the district. Drudgery reducing equipment, implements and advanced farm machineries that are receptive to custom hiring centers may have a demo unit at each KVK level. This will be a custom hiring centre to meet their objectives of bringing a greater number of farmers at their support. Should such a provision be kept under KVKs, the designated tractor drivers can develop the skill to support such demonstrations.
- Fencing in KVK farm and making provision for deploying security personnel for safeguarding assets and infrastructures of KVK.
- AES specific technology reporting and documentation is not in vogue in the light of mission of KVK. Therefore, strengthening of DEEs in terms of manpower and ICT is a requisite for area specific technology mapping and communication. ICAR should make additional fund provision for the same.
- Number of SMSs is not optimum and any vacancy makes it difficult to achieve mandate by the KVK. In case of staff vacancy contingency may be enhanced and Heads of Host organizaions be allowed to engage contractual staff against sanctioned positions till appointment made.
- Fund for Farm development and implement shed is required at all KVKs for efficiency and durability of equipments as one time grant.
- Funds for demonstration units to KVKs on demand/merit may be provided for organizing instructional training.
- Official Vehicle replacement needs to be made easy in light of changing government order from state to state, in most of RPCAU-KVKs official vehicles are quite old and non-working.
- After 7th pay adoption, no KVK is able to adjust itself within the sanctioned amount under T.A. head, payment of even a single transfer T.A.is difficult.

- The sanction on contingency is more or less fixed over the QRT period, whereas the volume of programmes are increasing day-by-day, which is impossible to accommodate within this meager budget including day-to-day increasing office running costs.
- In last 4-5 years, the volume of sponsored training and exposure programmes from different converging Institutions has increased significantly. In this perspective, vertical or horizontal expansion of Training hostel is extremely needed.
- In perspective of 5th Deans' Committee recommendations for modification of UG Course Curricula (which is already in operation in all the Indian Agricultural Universities), the Under-Graduate students are to be placed/being placed in the KVKs for 24-26 weeks (6-months) to be involved and acquainted with the farming situation of the district. With the present accommodation facilities the KVKs are facing problems to accommodate them. It is proposed here that the dialogue be initiated between Agricultural Extension Division and Education Division of ICAR to explore the possibility of sanctioning a Students' Hostel in each KVK to facilitate this Village Exposure (under Student READY programmes) more effectively.
- Gap between policies of State Government and Central Government (eg. Purchase rule)
- Lack of fund provision in maintaining and running some of the facilities created (as for example, mobile diagnostic van including procurement of chemicals, POL and maintenance etc. hinders the effectiveness of the mobile van to its fullest extent).
- Security aspects of the KVKs situated in isolated locations outside the University or RRS poses burden of considerable expenditure towards security purposes for the KVKs.
- The terminal benefits of the KVK staff, brought under NPS are deficient of benefits like gratuity and leave encashment. Central government staffs brought under NPS are receptive to gratuity (Order No.: 7/3/2012-P&PW(F)/B dated 26.08.2016 of Ministry of Personnel, Public Grievance and Pensions). Predominant of the KVKs across India are serving under SAU system and the staff in the later get leave encashment as terminal benefit which is developing conflicting sentiments among the KVK staff. Therefore, it is proposed that such a benefit can be kept in the recommendation.
- The fund provided under contingency head can be taken up for reconsideration with the training cost undergoing major inflation with implication of price index across all components viz. fooding, lodging, transport and upkeep which have increased considerably. Cost of OFT and FLD also suffer from additional escalations owing to mandays involvement other than inputs.

- ATMA is the most salient feature of extension reforms. ATMA provides nominal fund for research only to KVKs from respective district allocation. No fund is given for improving / supporting infrastructure facilities. In the regard, incidentally RKVY may be also mentioned. It is proposed to put a mechanism in place which will allow a share of fund from such corpuses to be earmarked to KVKs against specific proposals. Such guidelines may be recommended by the QRT to the Krishi Bhawan and ATMA. The KVKs organized various training programmes delegated by the National Horticulture Mission. In addition to the training cost they may also be requested to earmark a share of fund for KVK infrastructure development.
- Over the last few years the Govt. is spending heavily on Tribal Sub Plan programmes. Most of the AICRPs have additional mandate of organizing such programmes and funds are quite generous. It is felt that the KVKs have a better capacity by the location, interdisciplinary team and delivery means to make better justice to TSP programmes. Accordingly such programmes is also advocated in the KVK system.
- In ATMA there is no institutional mechanism to upscale information of KVK technologies with the ATMA excepting personal endeavors. It is proposed to institute such mechanism which will at least include the Directorates of SAUs with the ATMA functioning for information up-scaling only.
- With the ICAR developing a greater bias, befittingly, for extension activities dedicated training modules for scaling up skills of administrative staff of KVKs are proposed at central level, preferably NAARM or any other institute deemed fit. Such courses can also be introduced monitored by MANAGE. With the climate shift rendering existing technologies and cropping system more redundant demand the positing of Agromet SMS for KVKs under BCKV may kindly be considered.
- To avoid over burdening of the KVK beyond mandated activities, more no. of convergence programmes are to be taken up where KVK may act as the technology partner instead of implementer in certain cases.
- Considering the large area of operation with remote locations, the number of technical staff in KVK system is inadequate to fulfill all the mandated activities in right time and right manner. Frequent movement of KVK staff to other organization even in lower scale with more secured and better promotional assurance, hampers the activity of the KVK which may be addressed by forming a policy framework in the highest level of GOI and ICAR.
- Any flagship programmes of GOI and State Govt. may be implemented by the KVK but it should be rooted through the respective ATARI for its better supervision, monitoring and showcasing. Here the due recognition to the KVKs & its Host Institute is to be given on priority basis.

- Premier ICAR Institute may work together with the KVKs to reach to the unreached in respect of technology dissemination & percolation in the ground level.
- KVK must emphasize on rain water harvesting, ground water recharging, green agriculture & environment, promotion of bee keeping and minimizing the post harvest loss in perishable agricultural commodities.
- Development of agri-tourism in suitable KVKs for better visibility of KVKs and income generation.

IACR Institutes (NRRI, Cuttuck; CIFA, Bhubaneswar; RCER, Patna; IINRG, Ranchi; CRIJAF, Barrackpore, NDRI ERS, Kalyani; CISH RRS, Malda; CIARI, Port Blair)

- KVKs in order to scale up technologies with the mainstream extension, manpower is a pre-requisite and as such, vacant posts are required to be filled up as early as it can be.
- Timely release of fund for mandated activities is to be ensured for safeguarding finance and audit issues
- Employing 'Young Professional- II' as stop-gap arrangement.
- Provisioning of new vehicle and replacement of old vehicles should be done at the earliest

NGOs (RKA Nimpith; Kalyan Purulia; Sevabharati Jhargram; RKM Ranchi; Vikash Bharti Gumla; Gramin Vikas Trust Godda; SKCET Madhubani; Holy Cross Hazaribag; Gram Nirman Mandal Nawada; SAMTA Seva Kendra Sitamarih; Vanvasi Seva Kendra Kaimur)

- For KVKs functioning for more than 20 years, additional fund should be released for renovation of the existing infrastructures like staff quarters, farmers hostel, administrative building, farm, etc
- A more fitting designation of the KVK staff should be given so that state government officials understand the importance of the KVK staff and their mode of functioning
- More fund provision under training head should be provided as there is huge demand from the farming communities of the district and also from other districts to get training from KVK. A large capacity training hall is highly needed for conducting training programmes, other special programmes collaborating with Line Depts., organizing seminars etc.
- Ensuring proper e-Connectivity in KVKs in remote areas.
- KVKs are functioning under different management control, there are variation in service conditions of KVK. There needs to be uniform service conditions across different management.

Uncertainty of job, retirement benefits like Gratuity, Leave encashment and other allowance as permissible available to their counterparts in the KVKs run by SAUs, ICAR institute and Govt. agencies & undertaking.

- Lack of both-way linkage between the KVK and Govt. departments. The linkage is mostly unilateral on the part of the KVK itself.

Chapter 5

Overall technical assessment

5.1. Identification and prioritization of technology and implementation of interventions

5.1.1. Priority areas of thrust

The QRT assessed the process used by the KVKs in identifying the technologies for dissemination. It came to notice of the QRT that the KVKs have critically evaluated the agro-eco system of the adopted villages for identification and prioritization of the problems which led to implementation of various interventions. The KVKs also took into cognizance the need for adequately covering the problem areas in the identified priorities. Although there are some inter-KVK variations in prioritization of technologies for dissemination pertaining to varying agro climatic situation, broad priority areas identified are enumerated as below,

ATARI Kolkata

- ✓ Enhancement of water use efficiency through micro-irrigation system
- ✓ Varietal substitution of field crops
- ✓ Economic improvement of farm women
- ✓ Drudgery reduction
- ✓ Value addition and minimization of postharvest loss crop diversification
- ✓ Promotion of IFS
- ✓ Improvement of livestock sector with feed and other management practices
- ✓ Soil health management
- ✓ Popularization of fodder production technology
- ✓ Application of RCT
- ✓ Application of ICT towards agricultural development
- ✓ Entrepreneurship development among rural youths
- ✓ Development of suitable strategy to combat climatic vulnerability towards crops and livestock production
- ✓ Formulation and execution of plan for Doubling Farmers' Income in West Bengal, Odisha and A&N

ATARI Patna

- ✓ Productivity enhancement of cereals, pulses and oilseeds
- ✓ Production of quality inputs like seed of major crops, planting materials etc. and breeds of livestock
- ✓ Maintenance/upholding of soil resilience
- ✓ Capacity building among rural youths towards self-employment
- ✓ Integrated nutrient, pest and disease management
- ✓ Establishment of integrated farming system in the region
- ✓ Crop diversification
- ✓ Empowerment of women in terms of improved nutrition, income and drudgery reduction through technological literacy
- ✓ Value addition, processing and market facilitation of household and commercial enterprises
- ✓ Use of resource conservation technology
- ✓ Up scaling and dissemination of climate resilient technologies to combat climate change
- ✓ Contingency planning for monsoon/ drought
- ✓ Emphasis on fodder cultivation for improving animal production
- ✓ Water harvesting and watershed management
- ✓ Small scale mechanization for reducing cost and drudgery
- ✓ Use of micro irrigation technology for more crops from each drop of water
- ✓ Up-gradation of non-descriptive, local cattle by descriptive Indian cattle breeds using AI technology
- ✓ Animal health care and management
- ✓ Production of fingerling of major, minor carp and other remunerating species like air breathing fishes
- ✓ Doubling the farmers income in agriculture and allied fields

5.1.2. Technological interventions – State wise

While identifying the technologies for further refinement and dissemination, KVKs have considered various parameters like agro-eco systems, interaction with farmers and groups, village survey, discussion with social leaders, self help groups, interaction with line departments on specific need, feedback from line departments on specific need, feedback from line departments, entrepreneurs, input providers, panchayat, scientific discussion during SAC meeting etc. It was noticed by QRT that

KVKs have thoroughly analysed farming situation and potential of proposed technologies to address the priority areas. Technologies prioritized and finalized after exhaustive discussion in SAC, state level and zonal level workshop also utilizing the knowledge of progressive farmers and KVK scientists.

Based on above priority areas, the interventions identified by KVKs are listed below. Although, there are few location specific interventions those vary from one state to another, category wise these are enumerated as below,

Crop production:

- ✓ Identification of short duration varieties of rice, wheat, maize, oilseed, pulses and vegetables for replacement of existing ones for increasing cropping intensity
- ✓ Improved production technology of oilseeds and pulses
- ✓ Introduction of high quality protein maize
- ✓ Low cost poly house for high value low volume vegetables
- ✓ Introduction of new cropping systems for crop diversification particularly in diara, chaur and tal areas
- ✓ Improved weed Management in field and vegetable crops
- ✓ Resource Conservation Technologies
- ✓ Crop Diversification
- ✓ Integrated Farming system
- ✓ Efficient water management through micro irrigation
- ✓ Seed/seedling production of major field and vegetable crops
- ✓ Nursery management for vegetable crops and efficient seeding raising techniques
- ✓ Fodder production for enhancing animal productivity
- ✓ Integrated nutrient management
- ✓ Production of low volume and high value crops
- ✓ Production of Off-season vegetables
- ✓ Scientific management of orchards
- ✓ Plant propagation techniques for fruit plants
- ✓ Processing and value addition of vegetable crops
- ✓ Arial farming and cultivation in land embankment
- ✓ Arecanut based farming system
- ✓ Introduction of black pepper in plantation crop as multi- tier cropping systems
- ✓ Development of agro-forestry and agri-horti system

Soil Health and Fertility Management/Soil and water conservation

- ✓ Soil fertility management soil test based fertilization
- ✓ Soil and Water Conservation
- ✓ Integrated Nutrient Management
- ✓ Production of organic amendments like, vermicompost, NADEP compost
- ✓ Management of problematic soils
- ✓ Management of secondary micro nutrient deficiency in soil and crops
- ✓ Increasing nutrient use efficiency
- ✓ Bio-fertilizer production techniques
- ✓ Soil and Water Testing
- ✓ Land shaping for rainwater harvesting and increasing cropping intensity
- ✓ Jalkund for orchard development
- ✓ Development of broad bed furrow system
- ✓ Development of agri-horti culture and agro-forestry system
- ✓ Introduction of quail farming

Livestock Production and Management

- ✓ Feed and nutrition management of dairy animals and poultry
- ✓ Introduction of prolific breed of animals and birds
- ✓ Pig rearing and introduction of prolific pig breed for tribal dominated zones
- ✓ Disease Management and dairy animals and birds
- ✓ Production of quality animal products
- ✓ Goat farming

Home Science/Women empowerment

- ✓ Household food security by kitchen gardening and nutrition gardening
- ✓ Design and development of low/minimum cost diet
- ✓ Designing and development for high nutrient efficiency diet
- ✓ Minimization of nutrient loss in processing
- ✓ Gender mainstreaming through SHGs
- ✓ Storage loss minimization techniques
- ✓ Income generation activities for empowerment of rural Women
- ✓ Location specific drudgery reduction technologies
- ✓ Preparation of rural crafts like, jute handicrafts, madhubani painting, kantha stitching
- ✓ Mushroom cultivation for nutritional and livelihood security

Agril. Engineering

- ✓ Installation and maintenance of micro irrigation systems
- ✓ Production of small tools and implements
- ✓ Repair and maintenance of farm machinery and implements

Biotic stress management

- ✓ Integrated Pest Management
- ✓ Integrated Disease Management
- ✓ Bio-control of pests and diseases
- ✓ Production of bio control agents and bio pesticides

Fisheries

- ✓ Integrated fish farming methods
- ✓ Carp breeding and hatchery management techniques
- ✓ Carp fry and fingerling rearing techniques
- ✓ Composite fish culture & fish disease management
- ✓ Fish feed preparation & its application to fish pond, like nursery, rearing & stocking pond
- ✓ Hatchery management and culture of freshwater prawn
- ✓ Breeding and culture of ornamental fishes for entrepreneurship
- ✓ Portable plastic carp hatchery
- ✓ Pen culture of fish and prawn
- ✓ Production of fingerling in biofloc
- ✓ Fish processing and value addition
- ✓ Introduction of brackish water prawn cultivation

Observations by the QRT on interventions by KVKs:

Observations by the QRT on the interventions made by the KVKs under review are recorded below, state wise,

West Bengal

Coastal areas in West Bengal, often affected with cyclones, need special attention on cropping system, land reclamations, drainage etc. Suitable activities with sustainable agricultural practices are needed. Upland area, where rain water is lost in the form of runoff, attention needs to be given on soil moisture conservation, rainwater harvesting and micro irrigation. Technologies on floriculture and organic farming are needed to be further strengthened. KVKs of West Bengal have done considerable work on mushroom production, goatary, fisheries, rejuvenation of horticultural

plants. However, these are needed to be undertaken in every block of district to raise the income of farmers. Area being coastal, mostly affected by disease and pest load due to highly humid condition. Therefore, biotic stress management needs concerted efforts.

Productivity per hectare, although increased in the past due to joint efforts made by KVK, line departments and entrepreneur farmers, still demand lot of attention for enhancing under variable climatic conditions year to year. Integrated nutrient management need more attention due to deficiency of micro and macro nutrients.

The productivity of animal is low and breeds improvement, feeding management and health care interventions are to be emphasized *per se*. No doubt KVKs of West Bengal achieved new heights in respect of duck, poultry and pig, fish culture, shrimp and prawn culture further dissemination of technologies are needed in other blocks and pockets. Efforts are to be made on seed production of air breathing fishes for production maximization.

KVKs have promoted jute based handicraft, kantha stitch, value addition, formation of SHG on mushroom, vermicompost and honey production. Such technologies are needed in other blocks to more emphasis is to be given on training and further adoption where entreprenuring farmers can act as trainer.

Odisha

Odisha has broadly two types of agro-climatic situations due to topography. Districts adjoining Chattishgarh, Andhra Pradesh and Jahrkhand have undulated topography predominated by laterite soil. These are frequently affected by drought due to erratic and low rainfall owing to climate change. On the other hand, flood prone and coastal areas face the problem of floods and cyclones. KVKs have made good efforts in disseminating technologies, other than on rice in upland area, on maize cultivation that have triggered considerable impact on the production and productivity. The flood prone and coastal areas need exhaustive work on drainage, land reclamation and suitable agro-technique to cope up with biotic stress.

Goatary, poultry, honey bee and mushroom cultivation had not only improved the production and economy of farmers but also provided nutritional security in rural areas. These technologies are needed to spread in other blocks to help the resource poor farmers for their livelihood security.

Bihar

Gangetic plains of Bihar are more mostly affected by frequent floods. Attempts made by KVK on various technological interventions are worth appreciation. Technologies on resource conservation like zero tillage wheat, rice, gram and lentil, rain water harvesting and pressurized irrigation, mulching in vegetables and SRI in rice have gained wide popularity in many districts of Bihar. Various package of practices enhanced the production of rice, wheat, maize, groundnut, green gram, black gram, mustard, linseed, niger, sesame, etc. Cultivation of high value low volume vegetables in low cost poly house has reformed the economic scenario in part of Bihar. Nutrient deficiency has been addressed efficiently using micro nutrient, macro nutrient, organic manure and organic agriculture.

Agro-techniques like IPM with bio pesticides and disease resistant cultivar introduction minimized the damage of field and vegetables crops due to biotic stress.

Under animal resource management dairy, back yard poultry, goatary, fisheries, feeding management have gained momentum in many districts. In addition to this, value addition, banana fibre handicraft, madhuvani painting, mushroom cultivation have improved the economic condition of farmers. In water logged area cultivation of improved cultivar of makhana and its processing helped employment generation in many districts.

The QRT opined that the flood prone area in the district need considerable technological application on suitable cultivations practices, drainage, package of practices combining integrated pest and nutrient management.

Jharkhand

Jharkhand has undulating hillocky topography which resulted draining off of rain water and causing soil erosion and deficient soil moisture regimes. In view of this, interventions by Jharkhand KVKs on resource conservation technologies like zero tillage, rainwater harvesting combining micro-irrigation have proved useful. Suitable cultivars and package of management practices for crops, cropping system and inter-cropping have gained popularity in many districts of Jharkhand. Integrated nutrient and pest management options, T&D breed of pig, Divyan red, RIR and Vanaraja breeds of poultry, composite pisciculture, goatary and backyard poultry has translated into significant economic upliftment of tribal farming community. Other intervention like honey bee, mushroom production and forest product helped the farmers through self-help groups approach.

Though rainwater harvesting combining micro irrigation has been attempted by many KVK but the impact like Gumla KVK has not been observed elsewhere. As the state has deficiency of 30 lakh metric tonnes of food grain, emphasis has to be given on development of suitable short duration variety, package of practice moisture conservation, judicious use of nutrient in the region. Most of the area in the state is covered under forest where various useful forest products, like medicinal plants, can be practiced along with field and horticulture crops. KVK may join hand with forest department official to make a plan for the tribal of forest domain area.

Last QRT recommended that location specific technologies and intervention may be prioritized in each district. It needs further intensification. Overall, it was observed that KVKs have indentified prioritized technologies through OFT, participatory rural appraisal, field visit, contact farmers, village survey and diagnostic visit. Many of the KVKs contacted farmers on phone through SMS and Whatsapp. QRT opined that KVKs should put adequate stress on crop diversification in view of climate change, introduction of high yielding short duration cultivars, resource conservation, integrated nutrient and pest management alternate land use, vegetable production round the year, post harvest value addition, improved piggery, goatary, poultry, livestock management techniques, composite fisheries, including fresh and brackish water prawn cultivation.

5.1.3. On-farm trials and impact

On-farm trials were conducted to assess the suitability of technology for specific farming situation and refine them for large scale adoption in varied thematic areas pertaining to field crops, livestock, value addition, drudgery reduction and others. The KVKs under the two ATARIs during the period under review conducted total of 7932 OFTs involving 72450 farmer partners (Table 5.1). Thematic area wise OFTs conducted by the KVKs over a period of eight year are given in Table 5.2.

Table 5.1: Summary of On-farm trials conducted by KVKs during the period under report

Year	ATARI Kolkata						ATARI Patna				Total	
	A & N Islands		Odisha		West Bengal		Bihar		Jharkhand			
	No.	Location	No.	Location	No.	Location	No.	Location	No.	Location	No.	Location
11-12	18	114	348	3095	204	1925	364	3305	254	2596	1188	11035
12-13	12	96	362	3004	93	898	175	1642	132	1373	774	7013
13-14	17	101	354	3230	134	1218	322	3267	171	1664	998	9480
14-15	17	89	337	3407	131	1193	300	3053	167	1599	952	9341
15-16	21	125	381	3612	152	1393	301	3045	135	1250	990	9425
16-17	20	157	369	3237	139	1273	316	3458	188	1744	1032	9869
17-18	19	110	383	2805	152	1417	316	2552	168	1313	1038	8197
18-19	20	120	375	3795	167	1321	254	1846	144	1008	960	8090
Total	**144**	**912**	**2909**	**26185**	**1172**	**10638**	**2348**	**22168**	**1359**	**12547**	**7932**	**72450**
Av/year	**18**	**114**	**364**	**3273**	**147**	**1330**	**294**	**2771**	**170**	**1568**	**992**	**9056**
Av/KVK/Year	**9**	**57**	**12.1**	**109**	**7.3**	**66**	**7.7**	**73**	**7.1**	**65**		

Table 5.2: Thematic area wise summary of On-farm trials conducted by KVKs during the period under report

Thematic area	A&N		Odisha		WB		Bihar		Jharkhand		Total	
	No.	Locations	No.	Locations	No.	Locations	No.	Locations	No.	Locations	No.	Locations
Crop	13	82	785	5500	130	1184	540	4534	367	3388	1835	14688
NRM	7	46	299	2357	216	1869	405	3869	206	2308	1133	10449
Pl. Protection	8	42	417	3404	105	978	479	4337	326	3011	1335	11772
Horticulture	19	129	165	1277	92	875	41	347	21	175	338	2803
Animal Husbandry	39	237	311	3928	162	1337	278	2538	196	1807	986	9847
Fishery	13	92	136	886	129	1340	88	815	0	0	366	3133
Home Sc.	7	46	107	1157	33	315	254	2317	122	1130	523	4965
Agril. Eng.	13	101	126	1107	28	359	42	551	63	503	272	2621
Others	26	137	563	6570	277	2381	221	2860	58	225	1145	12173
Total	**144**	**912**	**2909**	**26185**	**1172**	**10638**	**2348**	**22168**	**1359**	**12547**	**7932**	**72450**

Observations by the QRT:

- In order to make comparison between the states, the QRT took the average number of KVK fully operational during the period under report (since number of operational KVKs during the period were not same since additional KVKs came up subsequently within the timeframe of 2011-12 to 2018-19), per state as below,

  West Bengal – 20, Odisha – 30, A & N – 2, Bihar – 38, Jharjhand - 24
- QRT noted that performance of the KVKs are more or less satisfactory in so far as fulfilling this prime mandated activity is concerned. Considering 3 to 4 SMS positions are filled up on an average in the KVKs at all times during the period under report, the number of OFT/KVK/year should ideally be 6 to 8 and in this regard the KVKs of Bihar, Jharkhand and West Bengal have lived up to the expectations through conduction of 7-8 OFTs per year per KVK.
- Odisha KVKs were found to have put much more stress on OFT in their conduction of an average of 12.1 OFT per year per KVK.
- Many KVKs have incorporated more than 2-3 treatment. Only 2-3 treatments should have been compared with existing technology. Very few technology of OFT have gone into the recommendation by zonal workshop and state level workshop to line department. Director ATARI and Director of Extension Education of each SAUs have to take care on this issue so that technologies may be disseminated in good number after assessment and refinement.
- Except for the KVKs in A & N Islands, the issue of farm mechanization has not been emphasized in any other states through OFT. It was revealed form the fact that OFT on Agril. Engineering was in the range of (2 – 4) % among all OFTs conducted in all other states.

Impacts of the OFTs:

QRT observed that, many of the OFTs conducted have created a measurable impact on the end users. ATARI wise selected few are noted below,

ATARI Kolkata

- Late blight of potato is a major constraint in potato production in West Bengal. Hoogly KVK tested different fungicides in OFT in controlling late blight and the most promising fungicide of azoxystrobin upon being taken in FLD is at present being used by over 5000 farmers to their benefits in more than 1000 ha in the district
- Banana bunch cover tried by Nadia KVK upon being taken to FLD has been adopted by about 230 farmers in an area over 100 ha
- The technology of soil treatment with *Trichoderma harzianum*(@ 10 kg/ha) + foliar spray with *Trichoderma harzianum*@ 5g/L at 30 days interval, tested by Nimpith KVK, have successfully controlled collar rot disease of betel vine, a major commercial crop of South 24-Parganas, and at present more than 500 farmers are profitably utilizing it
- Pigeon pea variety of PRG 176 was tested by Bargarh KVK and upon being found to produce 36% more was taken to FLD and at present is covering over 1500 ha area in the district
- Murshidabad KVK after assessing performance of chital (*N. chitala*) and Tilapia (*T. mossambica*) for three years took the final recommendation of this OFT (Stocking of Chital fingerlings 3000 nos. /ha with brooder tilapia 150kg/ha (37.5 kg male and 112.5 kg female) along with Silver carp spawn 2-4 100 ml capacity bati/ ha) to FLD which apart from large number of farmers of Murshidabad district, farmers of North 24-Parganas have also adopted to their benefit
- KVKs of North 24-Parganas, Murshidabad, Nadia and Burdwan all after assessing location specific suitability improved jute variety of JRO 204, developed by ICAR-CRIJAF which yielded more to the tune of 11 – 24%, have promoted the variety through FLD and at present is covering an estimated 29000 ha in the above mentioned districts
- KVK Burdwan after refining SRI technology location specifically and in accordance with farmers suitability and ease of operation, have promoted the same through line department and at their own end, and at present, in the entire area under Kharif rice in 45 villages of the district, farmers are reaping the benefit of the refined technology through augmented productivity in the range of 17 – 48%

- KVK South 24-Parganas (Addl.) having standardizing the technique of broadcasting the Scampi (Freshwater Giant prawn) culture technique, disseminated the same in large scale among rural youths of Gosaba, Baruipur, Canning I & II and Basanti blocks
- In order to thwart ill effects of climate vagaries and safeguard farmers income, KVK Malda standardized one multi-tire copping system involving dynamic interactive practices for judicious use of the production components such as soil, water, air, space, solar radiation and all other inputs on sustainable basis to take full advantage of limited land resources while minimizing risks of crop yield loss. In this technology, entire growing space is used as crop fit together vertically or horizontally (tall, medium & short) and underground (deep-rooted and shallow-rooted plants). By adopting this technology, farmers who were making Rs. 60000 – 65000/ha through production of a single crop, are now earning Rs. 225000 – 250000/ha

ATARI Patna

- Application of one major principle of system of rice intensification, viz., single seedling transplanting, has been successfully tested and subsequently demonstrated resulting in enhancement of productivity to the tune of 30– 55 % by Rohtas KVK in Bihar. KVKs perseverance has now amounted to adoption of the techniques in nearly 80% of the total area under rice, i.e., 1.6 lakh ha, in the district of Rohtas.
- In view of the rapid population growth inflicting heavy pressure on resources, just and optimum use of resources is the need of the hour for sustainable agricultural production. Integrated farming system can effectively address the issue apart from raising farmers income significantly. KVK Lohardaga has developed a suitable location specific IFS through OFT and disseminated the same through FLD in the district. Shri Akhilesh Kumar Singh, one progressive farmer under the KVK has reaped the benefit of the technology to the fullest who has established an IFS unit comprising of dairy, fisheries horticulture and floriculture in a 22.5 acre land. His dairy unit has 30 cows with an average milk yield of 350 litre per day. His net income is rupees 15 lakh per annum at present.
- Technology for augmenting production of button mushroom was perfected by Aurangabad KVK. The technology, involving half composting of rice straw with carbendazim and Formalin + Poultry manure + Waste mahua + Urea + Cotton seed cake +Gypsum+SSP, produced 61% more mushroom over the commonly practiced one of using non composted rice straw. Over 65% farmers have adopted the technology.

5.1.4. Frontline demonstration and impact

Frontline demonstration is very convenient to make farmers realize the benefit of improved variety/technology and subsequent adoption by them for increasing upon the productivity and profitability of their crops. FLDs when done in cluster mode is further effective since the showcasing of the technology/improved variety is done is large number of field in an area which increases the visibility spectrum by other farmers. The QRT reviewed the performance of frontline demonstrations/clustered frontline demonstrations conducted by the KVKs of ATARI Kolkata and Patna during the period 2011-12 to 2018-19 and found that total 221715 number of demonstrations were conducted in area of 57362 ha. For oilseeds respective figures are 53929 numbers in 15364 ha and for pulses the respective figures are 64596 numbers in 16023 ha.

Table 5.3: FLDs/CFLDs conducted by KVKs during the period under report on oilseeds

Year	ATARI Kolkata						ATARI Patna				GRAND TOTAL	
	A & N Islands		Odisha		West Bengal		Bihar		Jharkhand			
	No	Area	No	Area	No	Area	No	Area	No	Area	No	Area
2011-12	0	0	608	169	295	56	357	121	651	149	1911	495
2012-13	0	0	684	208	729	124	488	145	1374	221	3275	698
2013-14	6	2	1987	568	2300	710	2780	700	1700	507	8773	2486
2014-15	5	2	824	241	901	183	791	262	1054	261	3575	948
2015-16	0	0	3124	874	3386	797	11772	3790	1893	503	20175	5964
2016-17	0	0	845	268	1311	300	902	346	2590	873	5648	1787
2017-18	3	1	1544	419	2416	534	535	199	2023	816	6521	1969
2018-19	0	0	670	209	2647	565	77	32	657	212	4051	1017
Total	**14**	**5**	**10286**	**2956**	**13985**	**3268**	**17702**	**5594**	**11942**	**3541**	**53929**	**15364**
Av/year	**2**	**3**	**1286**	**370**	**1748**	**409**	**2213**	**699**	**1493**	**443**	**6741**	**1920**
Av/KVK/Year	**1**	**2**	**43**	**12**	**87**	**20**	**58**	**18**	**62**	**18**		

(Area in ha)

Table 5.4: FLDs/CFLDs conducted by KVKs during the period under report on pulses

Year	ATARI Kolkata						ATARI Patna				Total	
	A & N Islands		Odisha		West Bengal		Bihar		Jharkhand			
	No	Area	No	Area	No	Area	No	Area	No	Area	No	Area
2011-12	0	0	560	168	422	72	629	197	1113	266	2724	704
2012-13	0	0	841	265	650	83	1274	398	1024	195	3789	941
2013-14	6	2	643	198	2402	740	2600	840	1840	507	7491	2287
2014-15	3	1	657	204	591	77	1488	382	1012	215	3751	879
2015-16	2	1	1045	341	11968	3348	6264	1945	2049	491	21328	6126
2016-17	0	0	7612	234	1042	198	2011	685	2768	839	13433	1956
2017-18	5	2	1149	435	2501	655	1011	342	2109	653	6775	2087
2018-19	13	2	821	293	2300	442	369	113	1802	194	5305	1043
Total	**29**	**8**	**13328**	**2138**	**21876**	**5615**	**15646**	**4902**	**13717**	**3361**	**64596**	**16023**
Av/year	**4**	**1**	**1666**	**267**	**2735**	**702**	**1956**	**613**	**1715**	**420**	**8075**	**2003**
Av/KVK/Year	**2**	**1**	**56**	**9**	**137**	**35**	**51**	**16**	**71**	**18**		

(Area in ha)

Table 5.5: FLDs/CFLDs conducted by KVKs during the period under report on crops other than oilseeds and pulses

Year	ATARI Kolkata						ATARI Patna				GRAND TOTAL	
	A & N Islands		Odisha		West Bengal		Bihar		Jharkhand			
	No	Area	No	Area	No	Area	No	Area	No	Area	No	Area
2011-12	0	0	1254	376	1864	310	1505	490	2189	581	6812	1757
2012-13	0	0	1367	382	2508	346	2838	831	2484	589	9197	2148
2013-14	8	2	1898	532	3303	946	3586	1027	2360	676	11155	3183
2014-15	14	3	1468	453	3881	528	4141	1188	385	385	9889	2557
2015-16	26	113	2465	768	16728	1019	4825	3607	2124	402	26168	5909
2016-17	16	8	1485	451	2516	410	4932	1707	4291	1655	13240	4230
2017-18	30	11	1559	308	3707	540	4198	1408	4690	1659	14184	3925
2018-19	18	6	1870	224	3353	511	3147	857	3241	778	11629	2376
Total	**112**	**143**	**13366**	**3494**	**37860**	**4610**	**29172**	**11114**	**21764**	**6725**	102274	26085
Av/year	**14**	**18**	**1671**	**437**	**4733**	**576**	**3647**	**1389**	**2721**	**841**	**12784**	**3261**
Av/KVK/Year	**8**	**10**	**56**	**15**	**237**	**29**	**96**	**37**	**113**	**35**		

(Area in ha)

Table 5.6: Crop/enterprise wise FLDs conducted by KVKs during the period under report

Crop/Livestock/ Enterprise	WB		Odisha		A&N		Bihar		Jharkhand		Total	
	No.	Area/No.	No.	Area/No.	No.	Area/No.	No.	Area/No.	No.	Area/No.	No.	Area/No.
Oilseed	13985	3268	10286	2956	14	5	17702	5594	11942	3541	53929	15364
Pulses	21876	5615	13328	2138	29	8	15646	4902	13717	3361	64596	16024
Others Crop	37860	4610	13366	3494	112	143	29172	11114	21764	6725	102274	26086
Livestock	4517	4378 nos.	4330	8695 nos.	75	176 nos.	949	9019 nos.	5048	19241 nos.	14919	41509 nos.
Fishery	1511	511 nos.	1012	1187 nos.	9	48 nos.	106	292 nos.	53	24 nos.	2691	2062 nos.
Implements	2009	260	1012	42	62	20	850	2595	16656	1504	20589	4421
Enterprises	4015	2765 nos.	3404	2991 nos.	48	260 nos.	894	3170 nos.	5576	971 nos.	13937	10157 nos.
Total	**85773**	**13753 ha and 7654 nos.**	**46738**	**8630 ha and 12873 nos.**	**349**	**176 ha and 484 nos.**	**65319**	**24205 ha and 12481 nos.**	**74756**	**15131 ha and 20236 nos.**	**272935**	**61895 ha and 53728 nos.**

(Area in ha)

Observations by the QRT:

With the number of functional KVKs in a state as in case of QRT's analysis of performance of OFTs in 5.1.3, the observations made for FLD performance is as below (Tables 5.3 – 5.6),

- West Bengal KVKs performed better as compared to other states of Bihar, Jharkhand and Odisha
- Overall, Demo plot size in Bihar and Jharkhand range from 0.8 – 1.0 acre/demo while that in West Bengal and Odisha is 0.4 acre/demo and 0.6 acre/demo, respectively
- Performance of Bihar and Jharkhand KVKs are comparable in all kinds of demonstration
- Bihar KVKs need to put more emphasis on pulse demonstration
- Odisha KVKs' performance was found to lag some distance behind other states and need to put due emphasis on frontline demonstrations
- Considering scarce availability of agricultural land in A & N, performance of the KVKs there is understandable. However, A & N KVKs need to search out whatever agricultural land is available to be brought under improved practices and may out more emphasis on demonstration on enterprise

Impacts of the FLDs:

The QRT took note that many of the KVKs under review in all the states have conducted FLDs that have perceptibly improved the economic security of the farming community and the technologies have horizontally spread to sizable area. Few selected cases are as hereunder,

ATARI Kolkata

- Demonstration on production of high value crops in polyhouse by Nadia KVK has been adopted by over 350 farmers in the district covering an area of nearly 200000 sq. m.
- Use of methyl euzinal and cuelure trap tested by Nadia KVK have been able to successfully control fruit fly in fruit and vegetable crops and at present over 600 farmers in area more than 500 ha are using the technology
- FLD on seed production of Asian catfish, upon being demonstrated as a highly profitable venture in the district of South 24-Parganas by Nimpith KVK, has amounted to increase livelihood security of rural youths in the area. At present 235 youths are engaged in breeding of catfish while over 6000 youths are commercially cultivating it
- Betel vine is one prime commercial crop in South 24-Parganas. Owing to climate hazards, betel vine farmers used to incur heavy losses. Demonstration of climate smart *Pan Boroz* (Betel vine nursery), developed by Nimpith KVK, has successfully tackled the problem and at present nearly 3000 farmers have adopted the technology to their profit
- High yielding rice varieties like, Swarna Sub 1, Sahabhagi Dhan, Pratiksha have been popularized by a number of KVKs in Odisha and at present is in practice in more than 150000 ha area in the state
- Use of ethrel as growth promoter and female flower inducer has been found to increase productivity to the tune of 25% with additional income of Rs. 32000/ha and perspicacious effort by the KVK has resulted in adoption by over 1500 cucumber farmers in the district
- Vietnam koi culture in seasonal pond by Murshidabad KVK was found to produce almost 5 times more with effective gain on Rs. 11 lakh/ha and has been austerely propagated in the district adopted by 90% farmers who were made aware of the technology
- Front line demonstration by KVK South 24-Parganas (addl.) on ornamental fish culture has empowered number of women who was housewife before. They are earning Rs. 12000/month on an average and have improved livelihood of their family
- Frontline demonstration on kusumi lac production by Purulia KVK was found to increase lac production by over 100% with augmented income of Rs. 15600/kusum tree/year. The technology has produced a large number of entrepreneurs who have significantly raised their

income and one lac farmer, namely, Sh. Joydeb Mahato has formed a group of lac producer under him involving over 400 stakeholders and the total earning of the group is over Rs. 600 lakh per year while Shri Mahato's individual income is to the tune of Rs. 30 lakh per year

- Demonstration on oyster mushroom cultivation and the impact it has created is praiseworthy. At present more than 22 SHG groups', 3 farmers clubs and more than 100 individuals are actively engaged with this venture and earning more or less 3.5 – 4.5 lakh per year per family

ATARI Patna

- Improved cultivars of lentil (HUL 57) and chickpea (GCP 105), having been demonstrated to produce significantly more (25 – 30%) as compared to locally practiced ones, has come into practice in nearly 1000 ha area in the district of Lakhisarai
- Improved shorter duration rice varieties (110 – 115 days) like, Rajendra Sweta, Rajendra Bhagwati, Rajendra Neelam are increasing replacing the age old practiced one of MTU 7029 having longer duration (145-150 days) in Bihar, largely being ascribable to Bihar KVKs intervention, enabling farmers to profitably grow rabi crops like mustard, gram, lentil, etc. This has increased the cropping intensity in the many districts of Bihar like, Banka, Lakhisarai, Muzaffarpur, Rohtas, Samastipur, etc. besides augmenting farmers income
- Consequent upon demonstration by Pakur KVK, Jharshuk breed of pig replaced the indigenous breed in over 40% area under tribal community in the district
- Demonstration of urea treatment of straw resulting in enhanced milk production to the tune of 26% by Banka KVK has gathered significant momentum in the district. At present more than 200 animal rearers in 62 villages of the district has adopted this technology to their benefit
- Clustered demonstration on soybean by Khagaria KVK have effected significant crop diversification in the district, where rice and maize were the principal crops of Kharif season. Soybean has now replaced kharif maize in 9 percent (1552 ha.) of the area while upland rice in 5 percent (1035 ha.) area. The total area 2587 ha., has been replaced by Soybean crops in Khagaria district
- Another notable crop diversification endeavour noted by the QRT was for Kisangunj KVK. The KVK introduced tissue cultured banana (var. G 9) cultivation which was advantageous over the local variety in regard of short duration of fruiting and enhanced productivity of about 25%. Significant number of farmers (244) in Thakurganj and Pothia blocks have profitably replaced rice in favour of TCB

5.1.5. Capacity building of various stakeholders and impact

Capacity building of stakeholders is instrumental in bringing about the necessary changes in individual attitudes. Learning by doing is always beneficial in so far as adoption of the technology is concerned. Though, the acquisition of skills is a time consuming exercise, skills once acquired could be retained much longer than the knowledge component.

Training programmes conducted by KVKs of ATARI Kolkata and Patna aimed at transfer of skill backed by empowerment in knowledge in particular aspects for three clientele groups namely farmers, rural youths including girls and extension functionaries. The training needs were primarily identified through PRA exercise, focused group discussion, informal discussion with farmers during field visit, discussion at SAC, specific request/demand received from farmers, farmers' organizations, SHGs, farmers' club, youths, NGOs and heads of line department officials as well as implementing agencies of various schemes/programmes in the respective districts. The KVKs under review followed different mode of knowledge transfer for specific clientele groups like general cultivation practices for farmers, entrepreneurship development opportunity and self-employment for youths and girls and frontier areas of technology development for extension functionaries. The training programmes encompassed various facts of agriculture and allied activities including empowerment of women for generating household-base income.

Capacity building of extension personnel is of prime importance in KVKs working. KVK being the only one or two of its kind extension agency in a district, it is not expected from KVKs to cover the entire spectrum of the district and as such empowering extension officials of the district, viz., ground level line department officials, NGO members, farmer club members, etc., is paramount for holistic dissemination of technology across the length and breadth of the district for extension personnel are positioned at the cutting edge level who have the direct interface with the farming community. Their role as link between KVK scientists and end users is of overriding importance. Therefore, they need to be updated regularly with the frontier areas of technology development through training.

Agriculture as subsistence farming is a point of concern for the entire country and by day, owing to multifarious factors, viz., increasing cost of cultivation, non-remunerative price of produce, lack of storage infrastructure and post-harvest processing facilities, farmers and rural youths are doing away with agriculture. It is highly imperative upon the KVKs that in order to attract and retain youths in agriculture, they be trained in the frontier areas of technologies for developing their own remunerative enterprise.

Training programmes conducted by the KVKs of ATARI Kolkata and ATARI Patna during 2011-12 to 2018-19 for the clientele groups viz., practicing farmers and farm women, extension personnel and rural youths are given in the following table (Table 5.7 to 5.9),

Table 5.7: Training of farmers/farm women by KVKs during the period under report

Year	ATARI Kolkata						ATARI Patna				GRAND TOTAL	
	A & N Islands		Odisha		West Bengal		Bihar		Jharkhand			
	C	P	C	P	C	P	C	P	C	P	C	P
2011-12	39	876	1059	25687	1121	34103	4085	184141	1940	37205	**8244**	**282012**
2012-13	59	2059	1124	28975	1314	40213	4154	140280	1589	44623	**8240**	**256150**
2013-14	42	1845	1258	30574	1332	40838	2441	94110	918	29556	**5991**	**196923**
2014-15	21	493	1459	31268	1557	48007	1208	27296	507	11170	**4752**	**118234**
2015-16	60	1974	1342	28951	1654	52628	4290	127276	1483	46349	**8829**	**257178**
2016-17	57	1719	1298	32486	1737	55564	4377	125709	1740	56212	**9209**	**271690**
2017-18	46	1441	1355	34417	1965	65253	4078	121530	1523	47140	**8967**	**269781**
2018-19	80	2465	1252	33008	3342	131016	4066	134139	1662	62275	**10402**	**362903**
Total	**404**	**12872**	**10147**	**245366**	**14022**	**467622**	**28699**	**954481**	**11362**	**334530**	**64634**	**2014871**
Av/Year	**51**	**1609**	**1268**	**30671**	**1753**	**58453**	**3587**	**119310**	**1420**	**41816**	**8079**	**251859**
Av/KVK /Year	**25**	**805**	**42**	**1022**	**88**	**2923**	**94**	**3140**	**59**	**1742**		

(C = No. of Courses; P = No. of Participants)

Table 5.8: Training of extension officials by KVKs during the period under report

Year	ATARI Kolkata						ATARI Patna				GRAND TOTAL	
	A & N Islands		Odisha		West Bengal		Bihar		Jharkhand			
	C	P	C	P	C	P	C	P	C	P	C	P
2011-12	5	90	124	2015	155	4079	958	16607	162	4149	**1404**	**26940**
2012-13	6	133	139	2014	143	3736	524	14851	264	6574	**1076**	**27308**
2013-14	3	132	184	2341	206	5118	175	6722	66	2111	**634**	**16424**
2014-15	4	79	123	1486	137	3934	474	14892	189	7477	**927**	**27868**
2015-16	7	185	213	1842	188	5323	457	14437	152	5901	**1017**	**27688**
2016-17	0	0	198	2014	194	5595	569	21249	205	7613	**1166**	**36471**
2017-18	10	234	165	2555	205	5761	558	21507	224	8630	**1162**	**38687**
2018-19	7	160	129	2007	289	10572	491	23400	196	6461	**1112**	**42600**
Total	**42**	**1013**	**1275**	**16274**	**1517**	**44118**	**4206**	**133665**	**1458**	**48916**	**8498**	**243986**
Av/Year	**5**	**127**	**159**	**2034**	**190**	**5515**	**526**	**16708**	**182**	**6115**	**1062**	**30498**
Av/KVK/Year	**3**	**63**	**5**	**68**	**9**	**276**	**14**	**440**	**8**	**255**		

(C = No. of Courses; P = No. of Participants)

Table 5.9: Training of rural youths by KVKs during the period under report

Year	ATARI Kolkata						ATARI Patna				GRAND TOTAL	
	A & N Islands		Odisha		West Bengal		Bihar		Jharkhand			
	C	P	C	P	C	P	C	P	C	P	C	P
2011-12	14	325	218	5268	234	5975	882	20897	384	7673	**1732**	**40138**
2012-13	21	578	198	5024	266	7268	952	22281	410	8604	**1847**	**43755**
2013-14	15	659	268	6894	302	7829	872	33611	328	10556	**1785**	**59549**
2014-15	21	493	239	6124	389	10612	1208	27296	507	11170	**2364**	**55695**
2015-16	27	767	267	6983	688	17418	1079	24811	420	9261	**2481**	**59240**
2016-17	27	768	186	4598	607	16238	1063	27973	602	23257	**2485**	**72834**
2017-18	30	887	244	3900	336	7307	994	24967	412	14391	**2016**	**51452**
2018-19	27	830	197	3088	382	10050	918	22799	488	14653	**2012**	**51420**
Total	**182**	**5307**	**1817**	**41879**	**3204**	**82697**	**7968**	**204635**	**3551**	**99565**	**16722**	**434083**
Av/Year	**23**	**663**	**227**	**5235**	**401**	**10337**	**996**	**25579**	**444**	**12446**	**2090**	**54260**
Av/KVK/Year	**11**	**332**	**8**	**174**	**20**	**517**	**26**	**673**	**18**	**519**		

(C = No. of Courses; P = No. of Participants)

Observations by QRT:

- The KVKs under review in the two ATARIs have conducted total 89854 training courses involving 2692940 numbers of stakeholders
- When compared among states, Odisha KVKs were found some distance behind the other states of West Bengal, Bihar and Jharkhand. On an average, Odisha KVKs used to conduct 55 training courses per year involving 1264 participants
- Performance of Bihar and West Bengal KVKs stand out in so far as capacity building of farmers and farm women are concerned. During the period under report, Bihar KVKs have conducted average of 94 trainings courses involving 3140 farmers/farm women, while the respective figures for West Bengal are 88 courses and 2923 participants
- As for capacity building of extension functionaries, Bihar has performed much better than all other with an average of 14 courses involving 440 functionaries. The QRT noted that Odisha KVKs again found lacking in this respect, while West Bengal and Jharkhand KVKs have much scope of improvement
- The case for capacity building of rural youth revealed that Bihar KVKs are again ahead of other states, while West Bengal and Jharkhand are comparable in their enveavour towards this end

Impact of capacity building programmes:

The QRT observed to their satisfaction that a number of training programmes has yielded significant impact among the targeted clientele. A synopsis towards this end is enumerated below,

ATARI Kolkata

- Over 1000 farm women in Birbhum are earning average of Rs 90000/- per annum after getting training and subsequent development of entrepreneurship on kantha stitching
- Over 1200 rural youths have been developed as "Friend of Coconut Tree" who were provided with a climbing machine and their engagement by coconut cultivators have increased coconut production by 15% in Nadia district
- KVK Nimpith have been able to develop skill of 500 farmers/rural youths of districts of South 24-PArganas, Nadia, Burdwan, Hoogly on on-farm production of *Trichoderma harzianum* who apart from meeting their own requirement of this biocontrol agent in their farms, are providing it to their fellow farmers as well who, in turn, are successfully utilizing it for eco-friendly crop protection. An estimated 4500 farmers have benefitted in the above mentioned districts upon this endeavour

- KVK Nimpith have developed over 600 "*Prani Bandhu" (*para-vets) for rendering private AI and vaccination activities on charge basis who are rendering services in remote villages and to a large extent have nullified the inadequacy of government functionaries in the district
- Jalpaiguri KVK's initiative of training of farmers and rural youths on cultivation of summer squash, a non-conventional exotic vegetable, being highly remunerative, have popularized its cultivation among a large number of youths and farmers who are fetching considerably higher income per unit of land. The KVK has built capacity of a total of 830 stakeholder for its farming out of which 785 have engaged in its cultivation. The same KVK's intervention on poultry farming have also sizably improved the livelihood of rural youths and farm women. At present nearly 1200 such clientele are rearing poultry birds in their homestead or in large scale amounting to sizable increase to their household income
- One of the salient achievements of the KVKs under ATARI Kolkata is making cultivators of all kind realize the importance of seed treatment for augmented productivity and decreased cost of production. Capacity building on seed treatment of all major crops in the region, viz, rice, potato, jute, wheat, maize, etc.by almost all KVKs have led to increase in productivity of the crop by 4-12% and present is being followed in mass scale in all the states
- Vegetable cultivation in multitier horticulture system by rural farm women by Malda KVK has empowered sizable number of women who could increase the productivity per unit area as well as increase in income by as much as 70%. As reported, over 750 frm women have engaged themselves in this venture in the adopted villages of the KVK
- Also capacity building of farmers on seed and planting material production by KVKs of Soth 24-Parganas, Burdwan, North Dinajpur, Burdwan, Hoogly, Nadia, etc. have ensured availability of quality seed of crops like rice, lentil, green gram, potato, wheat, vegetables and planting materials of fruit trees like mango, guava, citrus all over the district and have paved way for enhancing productivity standards of the districts

ATARI Patna

- KVK Gumla, Jharkhand's endeavour of capacity building on bee keeping is commendable. The Krishi Vigyan Kendra imparted training to about 607 youths during the period 2016-17 to 2018-19. KVK has established marketing window in which the trained bee keepers sell the unprocessed honey at a support price fixed by the KVK (presently Rs. 180 per kg.). Raw honey is processed and packed at the KVK and supplied to the users on no profit no loss basis. This helps the bee keepers to sell their products at a very reasonable rate. During the period 2016-17 to 2018-19 an amount of 242.8 quintal of honey was procured by the KVK from the trained bee

keepers. The number of bee boxes provided by Host organization so far is 1500, colony distributed 1500 and quantity of honey sold 1546.88 quintals. Presence of resource for bee keeping and continuous efforts of Krishi Vigyan Kendra by it's long duration training programmes and holding of farmers bee-keeping work flourished in the area and is adopted by large no. of farmers

- KVK Ranchi's endeavour towards honey production is noteworthy. The KVK upon building capacity of large number of farmers and rural youths, facilitated formation of cooperative in which over 550 farmers are involved. Present earnings of this cooperative range from 3 to 10 lakh rupees per annum. Similar efforts of KVK Gumla towards honey production is also praiseworthy where more than 600 farmers have improved livelihood options at their disposal at present in adopting honey production
- Instead of doing agriculture in 'business as usual' mode, effecting it as agribusiness can be as good as any occupation has been exemplified by Mr. Sohan Kumar Gupta, who upon being developed as an entrepreneur on nursery by Ranchi KVK, is having an annual turnover of 2 crores per annum at present. Another instance is of Mr. Ramesh Kumar who have become 'Lakhpati' through his efforts his enterprise of lac production. His present earning amount to Rs. 3 to 4 lakh per annum. Rajkishor Mahato of Lohardaga is another case who has transformed agriculture to agribusiness. After having requisite trainings from KVK Lohardaga, he had ventured into agribusiness. Mr. Mahato, who in the beginning had only 8 decimal of land, has now acquired 25 acres of land. From 10 acre land, he along with his three co-workers earned rupees 25 lacs by growing watermelons and another 10 lacs from muskmelon crop. They are using drip irrigation system on which they are training other farmers also
- Entrepreneurship development by KVK Ramgarh deserves appreciation. Entrepreneurs has been developed in various fields through rigorous capacity building by the KVK. Mushroom cultivation is being done in 500 units. Also there are 500 piggery units. Besides there are 350 backyard poultry units. Eggs of kadaknath poultry breed are sold @ 35 rupees per egg Hindi local market. However if they are sent to Ranchi, each egg is fetching a price of Rs. 50. Another notable achievement of the KVK is vermicomposting using the floral waste from Sri Baidyanath Dhamtemple which every day generated quintals of floral wastes offered by lakhs of devotees
- Entrepreneurship development in Mushroom production has been a salient point of noting in the Bihar KVKs. Capacity development of rural youths and farm women by most of the KVKs of Bihar has produced over 1000 entrepreneurs in the state who are now earning between Rs. 10000 – 50000/- per month depending upon the scale of operation

5.1.6. Other extension activities and their impact

Technologies assessed through different programmes of assessment and demonstration are taken to the doorstep of the farmers through various extension activities. In creating awareness of the latest technologies in crop production, livestock farming, horticultural production, fishery and other allied technologies, the KVKs of ATARI Patna and Kolkata organized below mentioned other extension activities as enumerated below,

- Conducted 'Field Day' on crops/enterprises with involvement of large number of farmers and line department officials
- Organized Kisan Mela for showcasing flagship agricultural technologies or participating in Kisan Mela with the same end
- Organized Kisan Ghosthi with a specific target group of farmers for exchange of thoughts and chalk out strategies for their economic upliftment
- Organized Exhibition at various agri fairs and conclaves at local or national level
- Showed pertinent films on agri-technologies to targeted group of clientele
- Method Demonstrations of farm implements and specific practices in agriculture and allied aspects
- Farmers Seminars, workshops, group meetings to share thoughts and collecting feedback for refinement of practices
- Delivered lectures as resource persons in meetings/trainings/seminars organized by other departments
- Provided advisory services to farmers over phone, social media or though ICT platforms
- Regular visit to farmers' fields to monitor the on farm activities and build good rapport with farming community
- Courteously interacted with farmers visiting KVK and endeavour to address their problem/issues
- Diagnostic visits to farmers field to solve their problem on field
- Conducted exposure visits of selected farmer groups to various local and national organizations to expose them to frontier areas of technology development
- Organized ex-trainees sammelan to assess their retention of knowledge and making future training need assessment
- Conducted soil health camps and soil test campaigns for creating awareness among farmers on soil testing and soil test based fertilizer application for up keeping soil health
- Conducted animal health camps for vaccination of animals/birds

- Few KVKs have agri mobile clinic through which expert advice to farmers were provided
- Regularly organized farm Science club conveners meet for need assessment of villages and self help group/Mahila Mandals conveners meetings for chalking out plans for development
- Other programmes as and when entrusted upon the KVKs, like, Sankalp Se Siddhi, Swacchta Hi Sewa, Mahila Kisan Diwas, webcasing/telecasting of different welfare prgrrammes, large scale tree plantation, etc.

Other extension activities conducted in given in following table,

Table 5.10: Other extension activities conducted by KVKs during the period under report

Year	Number of Activities					Total
	ATARI Kolkata			ATARI Patna		
	A N Island	Odisha	West Bengal	Bihar	Jharkhand	
2011-12	95	1850	4660	4973	3390	14968
2012-13	143	1975	809	5645	1799	10371
2013-14	62	815	512	9534	6120	17043
2014-15	43	1506	1709	5948	4600	13806
2015-16	98	2855	4047	4999	1318	13317
2016-17	194	1908	1854	2831	4206	10993
2017-18	193	2573	4547	3424	1241	11978
2018-19	156	712	1107	3899	2191	8065
Total	**984**	**14194**	**19245**	**41253**	**24865**	**100541**
Avg./Year	**123**	**1774**	**2406**	**5157**	**3108**	**12568**
Avg./Year/KVK	**62**	**59**	**120**	**136**	**130**	**110**

Observations by the QRT:

- Although the QRT solicited the importance of these other extension activities, it maintained that making some of these activities, like, cleanliness programmes, webcasting events, participation in all exhibitions mandatory would unduly overburden KVK to accomplish its mandated functions conscientiously
- In many KVKs of Bihar and Jharkhand, KVK experts are either willfully or made to deliver lectures as resource person in plentiful which may be minimized so as not to disrupt their KVK activities
- In many cases, line department officials are not invited or not present in Field days which fails its objective of holistic dissemination through state functionaries. KVKs, in general, should take due care of this aspect
- Providing advisory through social media is highly effective since it can accommodate all kinds of documents and pictures. All the KVKs must adopt this practice effectively

5.1.7. Other flagship programmes of the ATARIs

Apart from the mandated activities of OFT, FLD, training, seed production, KVKs used to conduct various other programmes of Central and state sector schemes which are crucial towards socio-economic development of various echelons of stakeholders. The details of involvement of KVKs in special programmes, viz., Attracting and Retaining Rural Youth in Agriculture (ARYA), Mera Gaon Mera Gaurav (MGMG), seed hub, CFLDs on oilseeds and pulses, National Innovations on Climate Resilient Agriculture (NICRA), tribal sub plan, Krishi Kalyan Abhiyan (KKA), skill development training under Pradhan Mantri Kaushal Vikas Yojna (PMKVY), Cereal System Initiative in South Asia (CSISA), District Agro-met units under Gramin Krishi Mausam Seva (GKMS), Knowledge Systems and Homestead Agricultural Management in Tribal Areas (KSHAMTA), Farmers first, New Extension Methodologies and Approaches (NEMA), Rural Agricultural work Experience (RAWE) Nutri-Sensitive Agricultural Resources and Innovations (NARI), Value Addition and Technology Incubation Centres in Agriculture (VATICA), Diploma on Agricultural Extension services for Input Dealers (DAESI) is given in Table 5.11 & 5.12.

The special flagship programmes undertaken by the ATARIs through KVKs are as below,

ATARI Kolkata

The special programmes undertaken in ATARI Kolkata and it KVKs are ARYA, MGMG, seed hub, CFLDs on oilseeds and pulses, NICRA, TSP, KKA, PMKVY, CSISA, GKMS, KSHAMTA, Farmers first, NEMA, RAWE, NARI and VATICA. Total number of ICAR institutes, SAUs and KVKs involved in implementing the programmes are as below,

Table 5.11: Flagship programmes undertaken by the ATARI Kolkata

Name of programme	No. of ICAR Institute(s)/ SAU(s) involved	No. of KVK involved		
		A & N Islands	Odisha	West Bengal
ARYA	-	-	5	4
NICRA	-	1	5	3
Seed Hub	-	-	7	3
CFLD under NFSM	-	3	31	21
CFLD under NMOOP	-	-	26	20
TSP	-	1	9	-
KKA	-	-	10	5
MGMG	17/1	-	-	-
CSISA	-	-	12	9
GKMS	-	-	10	6
DAESI	-	-	-	17
Farmer FIRST	3/1	-	-	-
NEMA	8/-	-	-	-
RAWE	-	-	22	9
PPV&FRA	-	-	33	19
NARI	-	-	4	2
VATICA	-	1	5	3
PMKVY	4/4	1	22	16
KSHAMTA	-	1	16	10

ATARI Patna

The special programmes taken up by ATARI Patna is similar to that of ATARI Kolkata and are depicted below,

Table 5.12: Flagship programmes undertaken by the ATARI Patna

Name of programme	No. of ICAR Institute(s)/ SAU(s) involved	No. of KVK involved	
		Bihar	Jharkhand
ARYA	2	1	1
MGMG	7	5	2
Seed Hub	10	7	3
NFSM	60	38	22
NMOOP	59	37	22
NICRA	13	7	6
TSP	14	1	13
KKA	32	13	19
PMKVY	48	32	16
CSISA	42	38	4
GKMS	31	14	17
NARI	0	0	0
VATICA	0	0	0
FFP	4	2	2
NEMA	0	0	0
IFS	9	6	3
PMKSY	44	24	20
PPV-FRA	12	8	4

Observations by the QRT:

- It was observed that KVKs in Bihar and Jharkhand are also part of MGMG programmes. MGMG programmes are exclusively for ICAR organizations. KVKs being mandatorily associated with villages, KVKs should abstain from this programmes
- In the CFLD programmes, provisions for hiring contractual person for record keeping must be made for proper monitoring and conduction of the programmes
- KVK should provide expert support in KKA programmes in lieu of full implementation in village level
- The DAESI programmes is of utmost importance as this enables input dealers, who are like pivot in so far as knowledge transmission to general farmers is concerned, with scientific and recent advancements in the areas of disease and pest management, nutrient management, etc. As such, the programmes may be done all the KVKs under review, instead of 17 KVKs of West Bengal who are at present engaged in the same
- Number of KVKs under programmes like ARYA, NICRA should be increased

Impact of the flagship programmes:

- Large number of latest and improved cultivars of oilseeds (**Groundnut**: ICGV 91114, TG-51, TG-37A, **Sesame**: Savitri, Amrit, GT-10, **Niger**: Utkal Niger-150, Birsa Niger 1; Mustard: NC-1, Keshari, JD-6, YSH 0401, Pioneer 45S35, R. Suflum, RGM-48, Utttra, Pusa-28, PM-30; **Linseed:** Garima, Shekhar, Priyam, Sharda, JLS-67; **Sunflower:** Pusa Mahak; **Safflower:** Akashgri, A-300, Dharani) and pulses (**Pigeon pea**: Pusa -9, Bahar, NBA-1, Malviya 13, Narendra Arhar 2; **Greengram:** Meha, Pusa Vishal, HUM-16; **Black gram**: Pant U315, Uttra; **Chick pea**: PG186, GNG 1581, BG372; **Lentil** :WBL 77, HUL 57, Arun; Field pea- Vikas, Prakash, HUDP15) have been put into practice covering sizable area coupled with infusing of improved technology components (seed treatment, line sowing, INM, IPM, improved crop nutrition) have led to significant increase in productivity of these crops through CFLD programmes under NFSM and NMOOP
- Large number of villages in selected 22 districts with discernible climate aberrancy in the states of West Bengal, Odisha, Bihar, Jharkhand and UT of Andaman and Nicobar has become resilient to a fair degree due to interventions done under NICRA. Another notable achievement of NICRA is farmers having at their disposal various improved farm implements for drudgery reduction in the custom hiring centers with Village Climate Risk Management Committee (VCRMC) constituted under the programmes in selected villages
- Capacity of large number of youths have been developed under ARYA programmes in 11 districts to enable them form their own money-making entrepreneurship in fields of nursery raising of vegetables, backyard poultry, mushroom cultivation, vermicomposting, goatary, piggery, lac Cultivation, fish fingerlings production of carps, value addition and processing of pineapples and apiary
- Substantial number of farming clientele (6.5 lakh approx.) have been directly benefitted in 1175 villages over 47 districts under 4 states by the KKA mission by virtue of by different programmes like training, soil health cards, provisioning of oilseeds & pulses mini kits, providing good planting materials, NADEP Pit establishment, mass animal vaccination, artificial insemination, deworming and animal nutrient supplements provisioning, farm mechanization, etc
- Availability of quality pulse seed have been ensured by 14 KVKs in West Bengal, Odisha, Bihar and Jharkhand through production of around 1050 tonnes of seed of lentil, greengram, etc. under Pulse Seed Hub programmes funded by ICAR
- Almost all the KVKs have conducted skill development programmes, each with minimum of 200 hrs duration, for different clientele groups under PMKVY through Agricultural Skill Council of

India. Many of those trained established their own enterprises or have got engagement, although significant number of these trainees are yet to accrue some benefit

- District Agro-Met Units have been established in 47 KVKs (WB-6, Odisha-10, Bihar-14, Jharkhand-17) under GKMS for regular monitoring of weather and provide agromet advisory to farmers
- About 16800 farm families have been benefited through Farmers First programmes in 4 states
- ICAR's collaboration with CIMMYT and launching of CSISA has done good work in preparing modules for hybrid maize and direct seeded rice

5.1.8. Innovative approaches by KVKs

In order that KVKs conscientiously implement their mandated activities holistically with the end of percolating the benefits to all strata of rural mass, they are required to innovate in its approaches for meaningful transmission of the technologies. Below are a selected few such notable approaches by KVKs under ATARI Patna and Kolkata which the KVKs have evolved during the period under report,

ATARI Kolkata

KVK online Agri-Mart

Market information for agricultural commodities is available through various Agri Portal. But participatory approach is required to reduce middleman's intervention. Mobile based online marketing platform can efficiently link buyers with seller. Farmers can get better price of their produce, buyers can get produce in cheaper rate directly form producer also it can reduce transportation cost. Popularization of such App is required through Govt. agencies and agriculture extension functionaries.

KVK Darjeeling developed this android based application for efficient marketing of farmers produce. The App is available in Google Play Store.

The KVK has also developed another application, namely, ***Citrus e-Clinic*** for monitoring orchards of Mandarin orange, which has very high export potential and one major source of livelihood of Darjeeling district farmers.

Technology partnerships and networking

Technology partnerships between the Rathindra KVK and reputed Governmental Organizations (GOs) and Non-Governmental Organizations (NGOs) have been very effective in technology development and transfer and market development. Rathindra KVK and its associated Networks consist of a group of institutions or associations with the aims of enhancing the capacity to conduct research and improving training and education through interaction thus forming a network to improve access to new ideas, methods, and information sharing and materials exchange. This recent initiative showed that these partnerships and networks can foster technological upgrading and improvement through quicker and more efficient extension at a much lower cost to each of the partners thus creating a Win-Win situation for all the partners.

Master Farmer Development

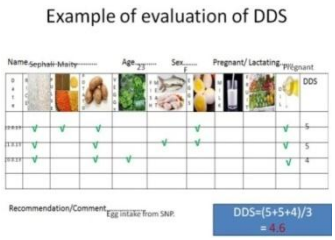
KVK has organized Master Farmer Development Programmes keeping in view the objective of some project. As per requirement KVK has prepared different module for Master Farmers Development such Potato seed production Technology, Ground nut seed production technology etc. Long duration courses were conducted in phases as per the availability and need of farmer as well as course content. Good numbers of progressive, knowledgeable and educated farmers were trained thoroughly on different aspect like Technology, Credit & Marketing and developed Master Farmer. Most of the farmers were young, energetic and under age group of 25-45 years. These Master Farmers are involved in production of seeds in their area through cooperatives/ Farmers club/FPOs etc.

Leadership Development programmes

Hooghly KVK has organized Leadership Development programmes in collaboration with NABARD. In this approach the leaders of farmers club of this district were trained on new technologies, technologies assessed/ refined by this KVK etc. After getting well training the leaders discussed the technologies in their Farmers Club monthly meeting and provide feedback regularly to this Kendra for further dissemination.

Diet diversity score (DDS)

KVK Nimipth have developed a Diet Diversity Scorecard for counting of food groups that a household or an individual has consumed over the past 24 hours for assessing the usual diet of household/individuals and overall food security round the year and intervening, as such, towards maintaining food security of households through interventions like crop diversification, homestead vegetable garden, weaning food etc. It is also useful in identifying the gender disparity in a household, if any. The process involves enquiring and individual his/her diet in the last three days and after distributing them in different food groups, scores are obtained. To achieve this end, one DDS chart consisting of nine (9) food groups from balance diet chart (like, 1. Rice/Puffed



rice/Pressed rice, 2. Dal, 3. Potato, 4 .Green leafy vegetable, 5. Fish/Meat, 6. Egg 7. Milk, 8. Fruit, 9. Oil) is made as below. Tick mark (√) is used instead of "0"or "1" value during interview considering illiterate people

This methodology, developed by the KVK, have been shared in National and International platforms and at present is being used by various NGOs, like, Prava, CWS , Avibyakti foundation (Jharkhand), DRCSC, Pradhan (West Bengal), Jansahas FES, IGSSS (Madhya Pradesh), Living Farm (Orisha), RNN (Nepal) engaged in estimation of food security in the country,

Community Score Cards

Community Score Card, was a tool developed by Nimpith KVK for qualitative monitoring at local level for performance evaluation of services, projects and even government administrative units by the communities themselves. The CSC process is an instrument to exact social and public accountability and responsiveness from service providers. However, by including an interface meeting between service providers and the community that allows for immediate feedback, the process is also a strong instrument for empowerment.

Participatory impact assessment tool box

KVK, Nimpith along with 40 other NGOs from South Asia, East Africa, Philippines and Germany participated to form a Forum – NGO IDEAS Corporation to develop participatory Impact

Assessment Mechanism specifically for women empowerment in the name of "Impact Tool Box" where target groups will play a key role in assessing the impact. The Tool Box consists of 4 tools viz. PWbR (Participatory Wellbeing Ranking), SAGE (Situation Analysis and Goal Establishment), PAG (Participatory Appraisal of Group) and PIAR (Participatory Impact Analysis and Reflection). PWbR is designed to involve the community in classifying the households into different categories of well beings i.e. quality of the life according to their economic, health, education, social and other status. It helps in identifying the need of the communities and the target groups with interventions. SAGE is used to identify the individual goals and to appraise changes at the individual and household level of the members of the groups or CBO members. It helps to assess the changes based on the goals set for in respect of personal, social, cultural, economical and political aspects. PAG is used to identify goals to be reached by the group and to asses it's performance with regard to the goals. Through PAG, the group members can measure the extent of their group's achievement. PIAR serves an in-depth analysis of outcomes and impacts of the NGOs / GOs works. It sets out from the method of self assessment of the changes among individual / household or CBO, elaborating their results with support of a number of additional element used at different level of PWbR, SAGE, PAG. By this, the NGO or any implementing organization can summarize the findings from the PWbR, SAGE and PAG, document and check the data quality, and analyze the consequences with reference to their prioritized area of intended change. The four tools are organically linked with each other and at the same time each tool can be applied individually according to the structure of the project or the type of participating organization.

Female Para-vet technicians (Prani Mitra)

In West Bengal, pertaining to lack of manpower in animal husbandry sector, qualified rural youths had been empowered as para-vets (Prani Bandhu) for rendering vaccination services in villages. Still, there is a serious dearth of qualified veterinary para-professionals in the remote villages. Keeping this in mind, ARD, Govt. of West Bengal initiated action of empowering farm women as Para-vets with the rationale that women usually takes care of the homestead animals and birds and this goes in harmony with the objective of gender mainstreaming in agriculture. KVK Burdwan has empowered 29 such rural women to vaccinate animals and birds in the villages who are now earning to the tune of Rs. 2000 to Rs. 5000 per month.

ATARI Patna

Kisan Choupal

Kisan choupal programmes is organized by KVK on every Saturday in pre decided villages with the purpose to solve the concurrent seasonal problems of farmers related to agriculture and allied activities and also providing information/suggestions regarding upcoming seasons activities. In this programmes KVK Scientists of all discipline is participating and farmers are raising their problem of different types and the respective scientist suggests the solutions to solve their problems. In the programmes, the appropriate technical bulletin and extension literature is also distributed among farmers. We are taking the support of line department's officials and progressive farmers for organizing these programmes. Kisan Choupal calendar is prepared Quarterly and circulated among line department.

Video Conferencing

For training of farmers of Lakhisarai district, video conferencing programmes is organized on Monday (any one day) of every week. For this progarmme, monthly calendar is prepared, covering the training topics of current cropping season/ new technology. The experts of BAU are directly interacting with the farmers through video conferencing at KVK. For this, more than 25 relevant farmers of different villages are contacted to attend the programmes.

Kisan Gyan Rath

Films on various topics related to the agriculture and allied activities are showed to farmers of various villages through Kisan Gyan Rath equipped with LCD and sound system. It's very interesting for farmers to show these films in their villages. These films are prepared by BAU, Sabour. Films on agricultural technologies and success stories were displayed for creating awareness and increase in knowledge.

Usage of social media platforms for information dissemination

Different Whatsapp group were created with farmers and KVK scientists as through Whatsapp group "Fish KVK trainees" all the updates related to training or information in the field of fisheries is provided to the fishermen. They also share information related to fisheries among themselves. Another Whatsapp group "Krishi Samwad Group" relates the entire KVK official agriculture department Government of Bihar, ATMA and with farmers, in which they discuss about new variety, diseases of plants, its remedies, Mandi information etc.

- With *Kisan Mausam* Whatsapp group weather related information are provided to Kisan Salahkar of the district and ultimately with farmers

- With Facebook page "*Plant pathology questionnaire*" plant related diseases and its remedy are discussed
- KVK website is started for information regarding all the activities of KVK and other information regarding KVK Staffs of all discipline displayed on the website
- We update all day to day activities of KVK, Saraiya on ICAR-KVK portal So, that farmers were aware about activities of KVK

Group Mobilization through Farmers' Field School

Group approach needs to promote in addressing the poverty of the rural people, particularly of farm-women and generating self-employment opportunities. Many organizations like NABARD and a number of centre-sponsored scheme namely SGSY are promoting group linkage with banks to provide income and employment opportunities. While assessing the impact and evaluating the performances of KVKs, the IEIA as well as previous QRT emphasized the aspect of group approach. The present QRT fully supports the views of earlier two committee and recommends that KVK should mobilize group formation and link with banks/markets to ensure poverty alleviation through on and off-farm activities. However, it was observed that the KVKs of Zone-II have formed large number of self-help groups of farmer/rural women, farmers' interest groups, farmers' club, farmers' cooperative and farmers' organizations and the KVKs are regularly providing support in the form of information and technologies. A good number of KVKs have made buy-back arrangements also with the farmers' groups to help them earn adequate return from their produce. The KVKs of Jharkhand acted as facilitators to tie up the farmers' organizations/SHGs with State Govt. (Jharcraft). Though the KVKs are to work with the SHGs formed by organizations like NABARD instead of forming SHGs at the cost of financial resources, success of group approach necessitated the KVKs to form SHGs of their own besides involving already established SHGs in its activities. The QRT felt that the KVKs should go for the formation of commodity-based groups and the group leaders to be trained at a regular interval to empower them with up-to-date knowledge, skill and processing technologies.

Farmers' field school is an approach that strengthened the concept of contact farming where learning experience follows the principle of 'seeing is believing' and 'learning by working'. This approach has been popular and effective in promoting knowledge and skill of integrated pest management of cereals and vegetables. A number of KVKs under ICAR-ATARI Kolkata and Patna namely, South 24 Parganas, Dakshin Dinajpur, Dhanbad, Gumla, Kaimur have successfully conducted farmers' field school with the participation of good number of farmers. Moreover, farmers' club and farmers' interest group have also been sensitized to modern advances in

technology through this approach. The QRT is of the view that this activity should mandatorily be conducted by all the KVKs under the ATARIs to expose the farmers towards modern technique of integrated pest management as well as cultivation practices of high value crops. Special fund provision should also be made to carry out this innovative approach in all the KVKs.

5.1.9. Cases of large scale adoption and impact

The QRT observed that there is good number of technologies in most of the KVKs those have been adopted in large scale through length and breadth of the district. Some selected cases are summarized below, ATARI wise,

ATARI Kolkata

- The district of South 24-Parganas, being located in the coastal areas, often is subjected to unvarying climate perils inflicting heavy loss of, apart from human and built capitals, cultivated crops thereby perpetrating heavy losses to the farming community and *per se,* farmers and farm women in the region had been doing away with farming, in huge numbers, and used to migrate to urban and suburban areas for alternate livelihood options. KVK Nimpith intervened by developing a land shaping technique that not only have put a check on the migration appreciably, but delivered them climate resilient sustainable agricultural options resulting in increased livelihood security of households. The technology has been adopted by more than 45000 number of farmers and well over 20,000 ha monocropped low lying area has been converted to medium-high land with option for 2nd crop cultivation by harvesting more than 6.75 lakh acre-inch rain water during the span of last 5 years. ***This technology contributed at least 4% increase in cropping intensity of the South 24 Parganas district of West Bengal and around Rs. 200 crore of additional revenue has been generated during the last 5 years***
- In order to put a check on the malnourishment of women and children, KVK North Dinajpur have developed a recipe for preparing weaning food, from locally available ingredients. ***Integrated Child Development Scheme, West Bengal have adopted the technology for commercial preparation of the weaning food for distribution to malnourished children and women through ICDS functionaries all over the district***
- The district of Purulia, West Bengal, being located in the dry areas, is deficient in water resources to an appreciable degree for ensuring year round farming in the district. Watershed development by Purulia KVK have mitigated the problem to a noteworthy extent. Major outcomes of which are listed below,

  1. In every month there is an increase in the depth of water in well after treatment

2. Afforestation in 245 ha of upland
3. Silvi-pasture in 40 ha
4. Rabi crops like, Groundnut and Mustard, have been introduced
5. Labour migration reduced from 528 to 423 households

- Sasya Shyamala Krishi Vigyan Kendra, RKMVERI's initiative of participatory seed production of rice variety Swarna Sub -1 & Greengram variety IPM-02-3 have enabled more than 400 farmers for improved livelihood. All the farmers were registered under subsidized seed production programmes through West Bengal State Seed Certification Agency. The farmers received additional Rs. 7.50 per kg of certified / foundation seed of rice and Rs. 38.00 per kg of green gram seed over the market price which amounted to additional income of Rs. 62500/- per ha for rice and Rs. 69000/- for green gram
- In Odisha, pertaining to having sizable number of people belonging to tribal community, mushroom traditionally have been the major source of protein for households, in general. The KVKs in Odisha, in totality, have refined the production technology through OFTs with subsequent dissemination by FLDs. This has resulted in year round availability of this cheap protein source, not only in the tribal dominated areas but, all over the state. Also, a number of farm women and rural youths have been empowered for income generation this enterprise
- Pertaining to Odisha KVK's efforts, rice varieties of Sahabhagi Dhan and Swarna Sub 1 has now replaced more than 10 lakh ha area which is about 25% of the total area under the crop in the state
- In the area of farm mechanization, tractor drawn axial flow thresher have been popularized in more than 10000 ha area in the district of Jajpur

ATARI Patna

- One remarkable initiative of KVK Purnea namely, "ANKURAN" has been adopted in large scale in schools of Bihar. In this programme, school children of Class I to VIII were trained on raising of vegetables such as tomato, pumpkin, brinjal, radish, mushrooms and various types of gourds in school kitchen garden which they would replicate with help of their family members in their homestead. The farming was done in an organic manner and the produce from school kitchen garden is used in the mid-day meal of the school. Presently over 70,000 government primary and middle schools in Bihar is growing their own vegetables, and in some cases fruits too, for use in the midday meal scheme. This school level farming initiative of "ANKURAN" is either being implemented or is in the offing in several states. UNICEF eulogized the outcome of the Scheme.

- Twisting technique in guava by KVK Kisangunj has covered over 250 ha area in the district. In this technique of guava, after canopy management through pruning, the new branches about 4-5 feet high are twisted in a special technique and from every leaf node of twigs numerous flowers emerge. After 7 months of massage one can harvest bumper crop. Thus through this technique one can get a good harvest as per one's wish by adopting the massage technique at the right time. Adoption of this technique has raised farmers income to tune of Rs. 2 lakh per acre
- 'Bora bandi' is one innovation by Gumla KVK under NICRA is a low cost water conservation initiative which is implemented by the KVK in many of their adopted villages resulting in large scale adoption in 5 district of the state on extend the area under Rabi and Summer crops in most than 3000 ha during 2015-16 and provided life saving irrigation for more than 2000 ha standing rice crop in the same year
- Community Nursery Raising is another intervention by Gumla KVK under NICRA that deserves appreciation. In past five years NICRA cluster and adjoining villages experienced deficient and untimely rainfall in July and first fortnight of August. Which resulted in delayed transplanting of old age seedlings (40-45 days). Transplanting of aged seedlings lead to low tillering resulted in poor crop yield. In order to address this problem KVK encouraged farmers of the village to grow community nursery with staggered date of sowing. This enabled farmers to access seedlings as and when needed by the progress of monsoon. And accordingly demonstration was conducted in four villages convening 241 no. of farmers. By the application of this approach farmers benefitted with an additional yield of 20 Q/ha (52.17% increase in yield) compared to farmers who transplanted over aged seedlings. Initiative community nursery raising has also left the wide impact through successful coverage of Rice also in the district and also state to by seeing the impact of community nursery state govt. has taken to replicate this model in 43 block across the state with the investment of 43.00 lakhs in 2013
- Wheat is one of the major crops in Bihar. However, productivity of wheat had been largely fluctuating due to sub optimum year round rainfall leading to reduced water availability during rabi season. KVKs in Bihar came up in big way to alleviate the problem through introduction of mechanical zero till wheat sowing in the left over moisture regime after rice harvest. KVKs of Bihar, is instrumental in enhancing the wheat area under zero tillage from about 45000 ha to over 2 lakh ha as of 2019. Also late sown wheat varieties of HI 1563, HD 2985, etc. are now being preferred by the farmers of Bihar leading to significant increases in productivity (15 – 20%) of wheat thanks to Bihar KVKs intervention

- Line sowing of crops has been adopted in very large scale in the district of Munger. Line sowing of different crops have been performed with the help of manual dibbler, multi crop seed drill, inclined plate multi crop planter, raise bed planter and zero seed cum fertilizer drill machine. Rice and vegetable nursery have also been transplanted by rice trans-planter and vegetable transplanted. About 12950 hectare crops have been sown or transplanted in row
- KVK Rohtas has shown the benefits of single seedling transplanting for rice in terms of productivity augmentation of the crop to large number of farmers through various mandated activities and, consequently, the technology has spread to more than 80 % of the rice area in the district thereby raising district rice productivity level to a fair degree

5.1.10. Seed/Planting material/Bio product/Livestock/Fingerling production

Availability of quality seeding material is pre requisite for productivity augmentation. As such one of prime mandate of KVKs is to produce seeding materials in its farm or in participatory mode.

Below is the summary of the seed and seeding materials produced by KVKs

Table 5.13: Seed produced by the KVKs for the period under report

Year	ATARI Kolkata			ATARI Patna		Total
	A & N Islands	Odisha	West Bengal	Bihar	Jharkhand	
2011-12	0.09	2.89	40.91	12.32	13.89	67.12
2012-13	0.12	3.05	12.39	22.04	10.58	45.00
2013-14	0.08	3.83	33.88	33.93	16.09	87.73
2014-15	0.10	3.68	53.92	40.80	19.48	117.98
2015-16	0.02	3.42	15.46	15.61	16.08	50.59
2016-17	0.06	1.57	72.10	39.76	110.96	224.39
2017-18	0.05	3.75	12.99	9.61	4.38	30.79
2018-19	0.46	4.45	13.02	9.63	2.25	29.80
Total	**0.63**	**20.70**	**254.67**	**183.71**	**193.70**	**653.41**
Avg/yr	**0.08**	**2.59**	**31.83**	**22.96**	**24.21**	
Avg/KVK/Year	**0.04**	**0.09**	**1.59**	**0.60**	**1.01**	

(figures in '00 tonnes)

Table 5.14: Seedling produced by the KVKs for the period under report

Year	ATARI Kolkata			ATARI Patna		Total
	A & N Islands	Odisha	West Bengal	Bihar	Jharkhand	
2011-12	0.04	15.48	5.84	5.46	2.98	14.28
2012-13	0.08	18.46	5.61	5.91	1.46	12.97
2013-14	0.09	22.41	8.87	17.70	5.23	54.30
2014-15	0.55	7.91	13.51	11.32	2.19	35.48
2015-16	0.11	25.96	49.09	9.47	9.75	94.39
2016-17	0.04	16.14	17.72	10.55	7.76	52.16
2017-18	0.56	25.72	17.29	15.60	11.23	70.40
2018-19	0.11	33.48	17.55	13.74	11.45	76.32
Total	**1.41**	**131.62**	**135.48**	**89.75**	**52.04**	**410.30**
Avg/yr	**0.18**	**16.45**	**16.94**	**11.22**	**6.51**	
Avg/KVK/Year	**0.09**	**0.55**	**0.85**	**0.30**	**0.27**	

(Figures in lakh)

Table 5.15: Bio product by the KVKs for the period under report

Year	ATARI Kolkata			ATARI Patna		Total
	A & N Islands	Odisha	West Bengal	Bihar	Jharkhand	
2011-12	1	0.21	0.49	4.5	6.77	254.96
2012-13	0.01	0.19	0.26	1.38	5.39	80.86
2013-14	0	0.95	0.11	4.81	8.48	14.35
2014-15	0	5.91	0.12	1	1.57	8.6
2015-16	0	0.59	1.74	3.39	2.82	8.55
2016-17	0	0.12	0.49	3.3	0.18	4.09
2017-18	0	0.26	0.72	2.7	16.38	20.06
2018-19	0	0.24	1.26	1.44	0.67	3.6
Total	**1.01**	**8.47**	**5.19**	**22.52**	**42.26**	**79.45**
Avg/yr	**0.13**	**1.06**	**0.65**	**2.82**	**5.28**	
Avg/KVK/Year	**0.06**	**0.04**	**0.03**	**0.07**	**0.22**	

(figures in '00 tonnes)

Table 5.16: Livestock/fingerling production by the KVKs for the period under report

Year	ATARI Kolkata			ATARI Patna		Total
	A & N Islands	Odisha	West Bengal	Bihar	Jharkhand	
2011-12	--	--	--	--	--	--
2012-13	0.02	29.64	31.21	0.02	0.23	31.24
2013-14	0	11.19	9.97	0.14	0.24	9.97
2014-15	0.05	18.45	12.33	0.06	0.16	12.39
2015-16	0	21.54	16.72	5.65	4.21	464.66
2016-17	0	22.64	16.97	3.85	0.68	16.97
2017-18	0.11	38.58	23.74	0.1	0.27	62.43
2018-19	0.05	13.47	28.9	0.15	0.21	42.42
Total	**0.23**	**155.51**	**139.84**	**9.97**	**6.00**	**311.55**
Avg/yr	**0.03**	**22.22**	**19.98**	**1.42**	**0.86**	
Avg/KVK/Year	**0.02**	**0.74**	**1.00**	**0.04**	**0.04**	

(figures in lakh)

Observations by QRT (Tables 5.13 to 5.16):

These are income generating programmeme and helping farmers to adopt up coming technologies. The seeds produced by all KVKs under both the ATARIs reported to be 65341 tonnes, seedling production 410.30 lakh, Bio product 7945 tonnes and livestock and fingerlings production 311.55 lakhs over eight years speaks of good achievement.

5.1.11. Soil, water and plant analysis

Declining soil health is a major issue which is putting a question mark on sustainability of production of crops in the region. The government, realizing this, have stressed upon the maintenance of soil health across the country through introduction of a Centrally sponsored scheme of "Universalization of Soil Health Card Mission". Although KVKs, owing to technical difficulty, is not a part of the programmes, yet, KVKs, with aid of the required infrastructure

provided by ICAR, is meticulously engaged in soil testing and issuing "Soil Health Cards (SHC)" on their own end. Besides, KVK scientist used to prescribe nutrient requirement on soil test basis, which have, apart from adding to the cause of maintaining soil health, have augmented to farmer's confidence upon KVKs.

Hereafter is presented the ATARI wise soil, water and plant analysis of KVKs,

Table 5.17: Soil sample tested and soil health card issued by KVKs under review

Year	ATARI Kolkata						ATARI Patna				Total	
	A&N Islands		Odisha		West Bengal		Bihar		Jharkhand			
	No*	SHC	No	SHC	No	SHC	No	SHC	No	SHC	No	SHC
2011-12	0	0	7358	7007	4343	1712	1723	2162	4508	3452	17932	14333
2012-13	100	0	7095	6144	3645	1980	2557	2557	5016	4866	18413	15547
2013-14	65	0	8620	8583	4259	2768	7269	7208	6064	5661	26277	24220
2014-15	0	0	10712	9895	5056	3939	9498	9477	5288	5420	30554	28731
2015-16	114	74	14966	26462	10000	10330	22966	27074	9319	26182	57365	90122
2016-17	422	72	11974	23460	9652	13523	18288	22114	34610	111243	74946	170412
2017-18	862	703	7731	17252	7826	8726	21731	36771	20531	67841	58681	131293
2018-19	237	734	6697	13554	10707	11904	22421	35642	24136	65975	64198	127809
Total	**1800**	**1583**	**75153**	**112357**	**55488**	**54882**	**106453**	**143003**	**109472**	**290640**	**348366**	**602465**
Avg/Yr	**225**	**198**	**9394**	**14045**	**6936**	**6860**	**13307**	**17875**	**13684**	**36330**		
Avg/KVK	**113**	**99**	**313**	**468**	**347**	**343**	**350**	**470**	**570**	**1514**		

(*No. of Soil Samples analyzed)

Observations by QRT:

- The KVKs under review have analyzed nearly 3.5 lakh (Table 5.17) soil samples and provided over 6 lakh SHCs to farmers and other clientele
- After launching of Universalization of Soil Health Card Mission by Govt. of India in 2015, which was meant to be done through state functionaries, the Govt. Of Jharkhand collaborated with Jharkhand KVKs through provisioning of fund and infrastructures for taking up part of their workload to which Jharkhand KVKs performed their role and provided about 2.5 lakh SHCs
- Since such kind of collaboration, as in case of Jharkhand, could not be done in case of other states, viz., Odisha, Bihar and West Bengal, their achievement in this aspect is understandably much less than Jharkhand KVKs (468, 343 and 470 nos. of SHCs for Odisha, West Bengal and Bihar, respectively). Although, the KVKs under West Bengal, Odisha and Bihar did not get funding to this end from respective State Govts., notably they have put much more stress on this issue since 2015-16 which is evident from their achievements (Table 5.17)

5.1.12. Publications

Publication of KVK activities through research papers, leaflets, booklets, newsletters, popular article, etc. is instrumental in disseminating the boons of technology application among farming community and their holistic application in the district by providing these to the line departments. During the eight years under report, KVKs and ATARIs have produced large number of publications as hereunder,

Table 5.18: Publications by KVKs of ATARI Kolkata for the period under report

State	Year	Research Paper	Book/ Book Chapter	Other	Total
A&N Islands	2011-12	4	2	14	20
Odisha		10	0	217	227
West Bengal		27	5	136	168
Total		**41**	**7**	**367**	**415**
A&N Islands	2012-13	5	3	13	21
Odisha		10	0	273	283
West Bengal		50	7	156	213
Total		**65**	**10**	**442**	**517**
A&N Islands	2013-14	4	3	10	17
Odisha		17	5	201	223
West Bengal		46	13	164	223
Total		**67**	**21**	**375**	**463**
A&N Islands	2014-15	4	4	11	19
Odisha		33	3	241	277
West Bengal		41	15	149	205
Total		**78**	**22**	**401**	**501**
A&N Islands	2015-16	4	3	10	17
Odisha		62	2	223	287
West Bengal		56	13	195	264
Total		**122**	**18**	**428**	**568**
A&N Islands	2016-17	4	2	12	18
Odisha		20	0	227	247
West Bengal		70	24	252	346
Total		**94**	**26**	**491**	**611**
A&N Islands	2017-18	9	5	19	33
Odisha		23	1	301	325
West Bengal		76	30	307	413
Total		**108**	**36**	**627**	**771**
A&N Islands	2018-19	12	6	39	57
Odisha		66	10	428	504
West Bengal		107	33	450	590
Total		**185**	**49**	**917**	**1151**
Total - A&N		**46**	**28**	**128**	**202**
Total - Odisha		**241**	**21**	**2111**	**2373**
Total - WB		**473**	**140**	**1809**	**2422**
Av/Year - A&N		**6**	**4**	**16**	**25**
Av/Year - Odisha		**30**	**3**	**264**	**297**
Av/Year - WB		**59**	**18**	**226**	**303**
Av/Year/KVK - A&N		**2.88**	**1.75**	**8.00**	**12.63**
Av/Year/KVK - Odisha		**1.00**	**0.09**	**8.80**	**9.89**
Av/Year/KVK - WB		**2.96**	**0.88**	**11.31**	**15.14**

Table 5.19: Publications by KVKs of ATARI Patna for the period under report

State	Year	Research Paper	Book/ Book Chapter	Other	Total
Bihar	2011-12	30	9	227	266
Jharkhand		35	2	117	154
Total		**65**	**11**	**344**	**420**
Bihar	2012-13	32	12	198	242
Jharkhand		39	2	185	226
Total		**71**	**14**	**383**	**468**
Bihar	2013-14	26	28	214	268
Jharkhand		39	1	182	222
Total		**65**	**29**	**396**	**490**
Bihar	2014-15	44	9	373	426
Jharkhand		44	3	174	221
Total		**88**	**12**	**547**	**647**
Bihar	2015-16	46	14	224	284
Jharkhand		58	6	181	245
Total		**104**	**20**	**405**	**529**
Bihar	2016-17	60	18	276	354
Jharkhand		55	6	226	287
Total		**115**	**24**	**502**	**641**
Bihar	2017-18	90	11	237	338
Jharkhand		108	35	321	464
Total		**198**	**46**	**558**	**802**
Bihar	2018-19	80	8	215	303
Jharkhand		119	29	375	523
Total		**199**	**37**	**590**	**826**
Total - Bihar		**408**	**109**	**1964**	**2481**
Total - Jharkhand		**497**	**84**	**1761**	**2342**
Av/Year - Bihar		**51**	**14**	**246**	**310**
Av/Year -Jharkhand		**62**	**11**	**220**	**293**
Av/Year/KVK - Bihar		**1.34**	**0.36**	**6.46**	**8.16**
Av/Year/KVK - Jharkhand		**1.63**	**0.28**	**5.79**	**7.70**

Table 5.20: Publications by ATARI Kolkata and Patna for the period under report

ATARI	Year	Research Paper	Book	Book Chapter	Technical Bulletin/Other	Total
ATARI Kolkata	2011-12	3	1	-	19	**23**
	2012-13	6	5	2	15	**28**
	2013-14	9	2	3	20	**34**
	2014-15	15	5	11	44	**75**
	2015-16	12	2	5	10	**29**
	2016-17	9	4	8	28	**49**
	2017-18	16	2	6	46	**70**
	2018-19	22	6	17	12	**57**
Total – ATARI Kolkata		**92**	**27**	**52**	**194**	**365**
Av/Year		**11.5**	**3.4**	**6.5**	**24.3**	**45.6**
ATARI Patna	2017-18		1	-	3	**4**
	2018-19		3	-	1	**4**
Total – ATARI Patna		**0**	**4**	**0**	**4**	**8**
Av/Year		**0**	**2**	**0**	**2**	**4**

Observation by QRT (Tables 5.18 to 5.20):

- The QRT observed inter-KVK wide variability in the publication front. Overall WB KVKs publishes average of 3 research papers per year per KVK while in Odisha, Bihar and Jharkhand the respective figures are 1.00, 1.34 and 1.63 per year per KVK. Regarding other types of publications, WB KVKs are in much better position compared to other states
- In case of West Bengal, efforts in this end for KVKs of South 24-Parganas (Addl.) (70), Coochbehar (69), Nimpith (49) and South Dinajpur (41) is praiseworthy. While for Odisha, KVK Angul stands out form the rest with total of 80 research papers in 8 years among a total of 241 for all the Odisha KVKs
- In case of Bihar, KVKs of Buxar and Katihar with 38 research papers each and KVKs of Jehanabad and Bhojpur with 33 each stabds out from the rest. In Jharkhand, efforts of KVKs of Palamu, Garwah and Sahibgunj with 47, 41 and 40 papers to their credit, respectively, deserved praise
- However, the QRT had questioned the fate of these publications whether being properly used by the client or not. The question remained unanswered as no such survey has been made by any of the KVKs so far

5.1.13. Recognition

The QRT noted that there is significant number of cases of recognition for the KVKs under ATARI Patna and Kolkata, either for the KVK or their clientele farmers/entrepreneurs. Few noteworthy such recognition cases are as hereunder, ATARI wise,

Table 5.21: Selected recognition for KVKs

Sl. No.	Name of KVK	Name of award	Year	Conferring authority
ATARI Kolkata				
1	KVK South 24-Parganas (Nimpith)	Pandit Deendayal Upadhyay Rashtriya Krishi Vigyan Protshahan Puraskar (National)	2016	ICAR
2	KVK South 24-Parganas (Nimpith)	Best Krishi Vigyan Kendra Award- (National)	2013	ICAR
3	KVK Purulia	Pandit Deen Dayal Upadhyay Rashtriya Krishi Vigyan Protsahan Puraskar (Zonal award)	2016	ICAR
4	KVK Bhadrak	Pandit Deen Dayal Upadhyay Rashtriya Krishi Protsahan Puraskar (Zonal award)	2018	ICAR
5	KVK Uttar Dinajpur	Pandit Deen Dayal Upadhyay Rashtriya Krishi Vigyan Protsahan Puraskar (Zonal award)	2017	ICAR
ATARI Patna				
1	KVK Rohtas	Pandit Deen Dayal Upadhyay Krishi Vigyan Protsahan Puraskar (Zonal)	2019	ICAR
2	KVK Samastipur	Best KVK Award (Zonal)	2012	ICAR
3	KVK Ranchi	Pandit Deen Dayal Upadhyay Rashtriya Krishi Vigyan Protsahan Puraskar (Zonal)	2016	ICAR
4	KVK Nalanda	Best KVK Award (Zonal)	2016	ICAR
5	KVK Gumla	Best NICRA KVK award	2014	ICAR

Table 5.22: Selected recognition for KVKs-farmers/entrepreneurs

Sl. No.	Name of awardees	Name of award	Year	District and State	Conferring authority
ATARI Kolkata					
1	Tapan Ghosh	Innovative farmer award (For development of 4-row low cost SRI marker)	2016	Birbhum, West Bengal	ICAR-IARI
2	Mr. Partha Sarathi Ghosh	Jagjivan Ram Innovative Farmer Award	2012	KVK S24-Pgs (Nimpith), WB	ICAR
3	Mr. Dolamani Sahu	Jagjivan Ram Abhinav Kisan Puraskar Award	2014	KVK Bargarh, Odisha	ICAR
4	Mr. Adhir Mahato	Outstanding progressive farmer	2017	KVK Purulia	ICAR
5	Sh. Ashok Kumar	Pandit Deen Dayal Upadhdhay Antodaya Krishi Puraskar	2016	KVK N&M Andaman	ICAR
6	Mr. Sukdeb Nath	Plant genome savior community award	2016	KVK S24-Pgs (Nimpith), WB	PPV & FRA, New Delhi
7	Mr. Adesh Dube	Outstanding progressive farmers	2018	KVK Purulia	ICAR
8	Mrs. Gauripriya Mahapatra	Best Women entrepreneur	2018	KVK Puri	ICAR
9	Mr. Sujoy Bera	Best Innovative farmer award	2018	KVK Howrah	ICAR
10	Mr. Padmanav Patra	Best Innovative farmer award	2018	KVK Keonjhar	ICAR
ATARI Patna					
1	Mrs. Rajkumari devi	**PADMASHREE**	2018	KVK Mujaffarpur	Hon'ble President, Govt. of India
2	Mr. Deepak Singh	Jagjivan Ram Abhinav Kisan Puraskar Award	2015	KVK Banka, Bihar	ICAR
3	Mrs. Vineeta Devi	Jagjivan Ram Abhinav Kisan Puraskar Award	2018	KVK Banka, Bihar	ICAR
4	Mrs. Rinku Devi	Jagjivan Ram Abhinav Kisan Puraskar Award	2018	KVK Banka, Bihar	ICAR
5	Mrs. Savita Devi	Pandit Deen DayalUpadhdhay Dairy farmer award	2019	KVK Banka, Bihar	ICAR
6	Mr. Rakesh Kumar	Jagjivan Ram Abhinav Kisan Puraskar Award	2016	KVK Nalanda	ICAR
7	Smt. Anita Kumari	Jagjivan Ram Abhinav Kisan Puraskar Award	2015	KVK Nalanda	ICAR
8	Smt. Neelam Kumari	Krishi Karman Award	2018	KVK, Khagaria, Bihar	DAC & FW, Govt. Of India
9	Smt. Kranti Devi	Krishi Karman Award	2017	KVK Gumla, Jharkhand	DAC & FW, Govt. Of India
10	Mr. Jitendra Kumar SIngh	Jagjivan Ram Abhinav Kisan Puraskar Award	2016	KVK Vaishali	ICAR
11	Vijay Kumar Singh	Best Innovative Farmer	2017	KVK Rohtas	ICAR
12	Mr. Swapan Gupta	Best Innovative Farmer	2017	KVK Ranchi	ICAR
13	Mr. Sumanata Mishra	Limca book of records	2016	KVK Jalpaiguri	Limca group

5.2. Mobilization of fund by KVKs though linkage/collaboration with various organizations of repute

Given the fact that ICAR, due to fund constraint, cannot make provision for adequate fund for all round infrastructure development in KVKs to transmute it to a resource and technology hub thereby increasing visibility of KVK, it is imperative upon the KVKs to attract outside fund so as to enable themselves towards the aforesaid objective. The QRT observed that a number of KVKs under two ATARIs have amassed fund to significant proportion through meaningful linkage or collaboration, apart from copious ICAR institutes, state governments, ATMA, RKVY, MGNREGA, etc., with various organizations/agencies of National and International repute while some other are lacking in this regard. Some notable organizations are enumerated below,

International Organizations:

- International Center for Agricultural Research in the Dry Areas (ICARDA)
- International Maize and Wheat Improvement Center (CIMMYT)
- International Rice Research Institute (IRRI)
- International Crops Research Institute for the Semi-Arid Areas (ICRISAT)
- Bill and Melinda Gates Foundation

Reputed National Organization:

- Bhabha Atomic Research Center
- National Tea Research Foundation
- National Fisheries Development Board
- Coconut Development Board
- Indian Farmers Fertilizers Cooperative Ltd.
- Indian Institute of Technology, Kharagpur
- Indian Meteorological Department
- Council for Advancement of People's Action and Rural Technology

Below is given the state wise resource mobilization under the two ATARIs,

Table 5.23 Resource mobilization by KVKs for the period under report

Year	ATARI Kolkata			ATARI Patna		Total
	West Bengal	Odisha	A & N	Bihar	Jharkhand	
2011-12	370.08	57.82	0.00	305.59	201.27	934.76
2012-13	1677.43	179.60	0.00	139.79	210.89	2207.71
2013-14	258.81	1170.61	0.00	165.74	392.58	1987.74
2014-15	1540.24	304.88	0.00	283.98	110.69	2239.79
2015-16	1160.28	286.42	0.00	249.81	103.92	1800.43
2016-17	1285.55	241.34	0.00	419.14	257.57	2203.60
2017-18	1655.30	158.77	50.15	458.22	146.74	2469.18
2018-19	1182.01	351.12	135.14	532.67	295.40	2496.34
Total	**9129.70**	**2750.56**	**185.29**	**2553.41**	**2807.79**	**17426.74**

(Rs. in lakh)

Observations by QRT:

- QRT happily noted that the KVKs under review have mobilized external resource as much as Rs. 174.26 crore (Table 5.23)
- South 24-Parganas (Nimpith) KVK alone hoarded Rs. 58 crore which is exemplary while South 24-Parganas (Narendrapur) KVK, although established in 2013, have mobilized Rs. 7 crore for creation of additional infrastructure
- In case of. Odisha, KVKs of Dhenkanal and Puri have amassed Rs. 3 crore each from other organizations
- In Bihar, KVKs of Banka and Lakhisarai, likewise Odisha, have gathered Rs. 3 crore each
- In Jharkhand, notable is Ranchi KVK, under RK Mission, who have mobilized outside fund of Rs. 11 crore during the period under report

5.3. Revenue generation

Production of seeding materials and other inputs in KVK, apart from meeting one of its objectives of ensuring availability of quality seeding material, boosts up the KVK resources for their infrastructural development. The QRT observed that there is wide variation in the resource generation among the KVKs pertaining to reasons like, availability of sufficient amount of land, manpower, mode of operation.

Below are the state wise summary tables under the two ATARIs regarding revenue generation,

Table 5.24: Revenue generation by KVKs for the period under report

Year	ATARI Kolkata			ATARI Patna		TOTAL
	A N Island	Odisha	West Bengal	Bihar	Jharkhand	
2011-12	0.84	16.5	1130.1	225.72	522.42	1879.08
2012-13	0.3	13.75	1849.07	281.43	275.01	2405.81
2013-14	1.25	14.05	523.69	172.34	397.88	1095.16
2014-15	2.2	18.52	1068	4495	1493	7058.2
2015-16	1.65	17.85	360.25	75.23	59.81	496.94
2016-17	0.92	21.49	192	124	76.83	393.75
2017-18	1.44	25.31	200.03	130.78	83.83	441.39
2018-19	0.95	14.83	301.72	353.04	235.36	905.9
Total	**9.55**	**142.30**	**5624.86**	**5857.54**	**3144.14**	**14778.39**
Av/year	**1.36**	**20.33**	**803.55**	**836.79**	**449.16**	
Av/KVK/Year	**0.68**	**0.68**	**40.18**	**22.02**	**18.72**	

(Rs. in lakh)

Observations by QRT:

- QRT noted there were large inter-state variations in generation of revenue by the KVKs
- Thanks to the efforts of some KVKs in West Bengal, like, Nimpith, Bankura, etc. who have generated huge amount of revenue over the year, the average for West Bengal KVKs for revenue generation is highest (Table 5.24)
- KVKs of Bihar and Jharkhand generated comparable revenue during the period unde report
- QRT expressed dissatisfaction over the fact that in case of Odisha KVKs the revolving fund produced by KVKs through sale produces and other means each year are taken over by OUAT. QRT maintained that the accrued fund must be retained by KVKs

5.4. Summary of overall assessment of the KVKs under review

The QRT, after rigorous and conscientious review and assessment of the 127 KVKs under the two ATARIs of Kolkata and Patna, is contented to take note that, overall, the KVKs are performing satisfactorily and have kept pace with the need of the country in so far as agricultural development and farmers empowerment is concerned, with exemption of few KVKs which were found not up to scratch due to reasons of lack of manpower, scarce infrastructure, highly disadvantageous location, administrative mismanagement by Host organization, etc.

However, the QRT maintains that in order to bring more vibrancy to this pulsating KVK system, each of the KVKs must maintain a specific standard as far as technical accomplishments are concerned and, *per se,* should emulate other KVKs which have made a name for themselves, in all the states, at National level.

Keeping this in mind, the QRT, while reviewing the KVKs, took meticulous note of achievements of the KVKs and selected FOUR KVKs from each of the states of West Bengal, Odisha, Bihar and Jharkhand who have outperformed other KVKs of their respective state by some margin and, the QRT, hereby, recommends that these selected **BEST KVKs** may lead by example in order to elevate the performance of their compatriot KVKs in the state. The common FIVE yardsticks for selection were

(i) Competent and adequate manpower

(ii) First-rate infrastructure

(iii) Admirable demonstration units for acting as resource and knowledge hub

(iv) Adroit management and sound technical backstopping by Host organization

(v) Plenty external resource mobilization

The KVKs selected as BEST were exceptional in all these indices. However, all these BEST KVKs have some specific focus areas in their repertoire which were unparallel. QRT also recommends that a précis of their activities and achievements should be documented and disseminated among all other KVKs so as to make them conspicuous in their working. The selected KVKs, with KVK-wise specific arenas which has led to their uniqueness among the lot, apart from the abovementioned, are as below state wise,

Table 5.25: Selected BEST KVKs with their specific feats

West Bengal	
S 24 Pgs Nimpith	• Very Good linkages with line department • State administration fund support • Land shaping & ail cultivation to offset salinity problems and enhancing cropping intensity • Numerous projects are run in collaboration with national and international organizations
N 24 Pgs	• Outstanding outreach to farmers
Coochbehar	• Custom hiring centre promoted by KVK • Seed production
Uttar Dinajpur	• Intervention of nutritional aspect to women • Seed production through seed hub
Odisha	
Jagatsingpur	• Holistic promotion of submergence tolerance rice varieties • Low input technology for mushroom production
Jharsaguda	• Excellent interventions on climate resiliency and their wide dissemination • Good numbers high earning entrepreneur developed
Sonepur	• Climate resilient technologies demonstration in large area of the district • Empowerment of tribal family through back yard poultry
Angul	• Value addition of the various products made large numbers of women SHGs self reliant • Very good numbers entrepreneurs developed • Attracts huge fund from corporate sectors
Bihar	
Bhagalpur	• Best IFS model developed in the campus and its replication in the farmers fields
East Champaran	• Good numbers of Entrepreneurs/FPOs
Aurangabad	• Outstanding outreach to farmers • Adroitly addressed water scarcity problem
Samastipur	• Excellent linkages with line department
Jharkhand	
Gumla	• Well maintained farm with all types of crops • Good number of Entrepreneurs/FPOs/SHGs of tribal community • Stupendous intervention on water resource management • State administration fund support

Ranchi	• Exceptional outreach to farmers • Wide network with National and International organizations drawing huge external fund • Extremely well developed farm to act as resource and technology hub
Hazaribagh	• Good linkages with line department • Good number of Entrepreneurs/FPOs/SHGs of tribal community • State administration fund support
West Singhbhum	• Good coverage of advisory and use of ICTs

5.4.1. Improvement of performance of under performing KVKs

QRT, while categorizing selected KVKs as BEST as above, also have taken note that some KVKs are performing much below satisfactory level pertaining to facts of scanty and dilapidated infrastructure, lack of capable manpower, non-fulfillment of targeted mandated activities, etc. These KVKs have been classified under "C" category, performance wise, by National Institute of Labour Economics Research and Development, an autonomous institute under NITI Aayog. QRT suggests that Director, ATARI's intervention is required for improving upon the performances of these KVKs.

Chapter 6

Monitoring and assessment of KVKs

Indian Council of Agricultural Research have evolved a four-tier assessment system for KVKs. Starting from the host organization at the primary level followed by overseeing by Directorate of Extension Education, SAC, ATARI and finally at headquarter i.e. ICAR, New Delhi.

ATARI Kolkata /Patna: Through these centers are working efficiently in guiding and monitoring of KVK activities besides contingency planning during climate urgency, ATARI Kolkata till 2017 was looking the activities of Bihar and Jharkhand KVKs also. Although ATARI Patna was created in 2017 for looking after the work of Jharkhand and Bihar KVKs while Kolkata ATARI is looking after WB, Odisha & Andaman & Nicobar Island. ATARI Calcutta have also shortage of staff which affect monitoring during SAC & state land meeting. ATARI Patna has to appoint remaining staff. QRT emphasized the appointment of staff for better monitoring of KVKs in these states. ATARI directors have to evaluate the programmes of KVKs and make way for other organization to collaborate with KVK.

6.1. Scientific advisory committee meetings

Scientific Advisory committee is one of the most prominent bodies of KVK which is supposed to meet at least once in year, if not more, to review the work, to make new plan catering to the need of agro climatic situation of the district and also assess the funds requirement for various jobs to be performed by KVK.

By and large, it has been observed that SAC meeting could be organized once in a year in all of the KVKs. The non participation of line department and other departments affect formulation of holistic action plan in many of the KVKs. Director extension of SAUs, a liasoning unit should take immediate action to invite all the members of SAC. On the other hand departments affording to provide input and resources including financial to equip the KVKs may also be identified and invited to participate in SAC meeting of KVK. While chalking out programmes on front line demonstration with line departments (agriculture, horticulture, soil science, animal science) it may be assured that no repetition of FLD may took place with line department programmes.

Since KVKs are working in mission mode on scientific base programmes, their FLD should be based on problem based issue like management of low lying water logged area, soil amelioration of acidic alkaline soil, dryland farming efficient use of limited water, besides abiotic stresses of agricultural and horiticultral crops and animal husbandry aspects on various types of animal in district. Line departments and KVK should be in regular touch with farmers and each other so that a suitable

farmer may be identified for nominating for award to be honored during foundation day, kisan mela where SAC members may also participate. In reckoning with latest invention in agriculture, the official of line department may be trained by SAUs. While chalking out programmes of each KVKs, director research and team of scientist (experts) may also be involved to develop science based programmes of KVK. Technologies may need dissemination may be identified and listed at university level after discussing with ICAR/NGO line departments and different state holders once or twice in a year.

6.2. Monitoring at DEE level

Most of the KVKs under review, being under SAUs, Director of extension education is one key body which can regularly guide KVKs under their jurisdiction and make regular contact with ATARI for further improvement of programmes to have better visibility and impact in each district.

It was observed that the contribution by DEE in SAC as well state level meeting is not optimum and as a result the desired effect are not visible.

- The technology list may be verified thoroughly by subject matter experts before implementing at the famous field
- DEE must provide technology backup to NGO KVK
- ICAR institute may also contribute their technology to SAU, sometimes these are not incorporate
- DEE should have strong liaison between state functionaries and KVKs
- DEE have to look that frequent transfer may not take place without the consent of Director ATARI
- In Jharkhand transfer problem is acute. Also the short fall in staff observed
- Salary based on 7th CPC is yet to be made where DEE and Director ATARI have to take extra care
- In KVKs of Odisha and OAUT Bhubaneswar there is disparity in the pay scale of KVK scientist and university scientist. VC, QAUT was informed to take up action on this issue
- Funds released by many university is not timely released. Director EE may take care on this issue
- Revolving fund are being used by host institute like Odisha & RAU, Birsa agriculture university and KVK institute
- DEE must assure that fund may be solely used by KVK for their developmental Work
- Documentation part of KVK need support of DEE and Director ATARI
- DEE must frequently visit each KVKs etc.

6.3. Monitoring at ATARI level (Visit summary of ATARI scientists to KVKs)

ATARI Directors and Scientists scrupulously visited KVKs under their supervision for time to time to monitor their ongoing activities and evaluate their performance while suggesting means for improving upon their performances. Below is given a summary table of their visits to KVKs,

Table 6.1: Visit of ATARI Directors and Scientists to KVKs during the period under Report

Name of Scientist	No. of KVKs visited									
	2011-12	**2012-13**	**2013-14**	**2014-15**	**2015-16**	**2016-17**	**2017-18**	**2018-19**	**Total**	**Average / year**
Dr. A.K. Singh, Director (upto 15.01.2016)	46	43	33	26	10	-	-	-	158	**31.6**
Dr. S.S. Singh, Director	-	-	-	-	-	-	23	22	45	**22.5**
Dr. S. K. Roy, Pr. Scientist	17	21	-	18	15	26	17	13	127	**15.9**
Dr. P.P. Pal, Pr. Scientist	15	8	11	7	3	9	11	8	72	**9.0**
Dr. A. Haldar, Pr. Scientist	-	-	-	-	-	8	15	7	30	**10.0**
Dr. S. K. Mondal, Pr. Scientist	-	7	11	10	16	3	14	7	68	**9.7**
Dr. F. H. Rahman, Pr. Scientist	-	8	18	11	20	20	21	13	111	**17.6**
Dr. K. S. Das, Pr. Scientist	-	-	-	7	13	9	14	6	49	**10.0**
Total	**78**	**87**	**73**	**79**	**68**	**75**	**115**	**76**	**651**	

Chapter 7

Recommendations

Preamble

The KVK as a science-based institution at the District level have demonstrated their strength, quality and expertise in technology assessment, its demonstration as front-line transfer of technology, and reach among the stakeholders. The present set-up is a show-case of technology generated by the National Agricultural Research System suitable for the agro-climatic and resource endowments of the farmers of the District, and an ideal platform for adaptive research and tailoring of technology as per requirements of the District. This institution today is an important segment of the country's agricultural research and transfer of technology system, and in great demand as the State Extension Services are not in a position to fulfill the demands of improved know-how agriculture technology for long-term sustainable agriculture.

Based on the critical observations made by the QRT on specific issues, given earlier, and referred to here, the recommendations of the Team are as hereunder,

Recommendations

1. Strengthening Infrastructure & Logistical Facilities at KVK

Director ICAR-ATARI may initiate necessary interactive meetings with the concerned administration, and also inform the Council to impress upon the Host Organizations for ensuring timely release of the funds. Council may enhance Contingency (on average of 20 lakh), special provision for renovations of Hostel; and engagement of Driver (on contract basis) for effective use of Mobile Van (*Refer page 23*).

2. Urgent appointments of vacant positions under different categories in KVKs

Director ATARI may come up with a case wise note bringing out the administrative and financial issues for filling on priority the vacant positions and based on interactions with the Host Institutions propose a workable solution for filling the positions, especially when 100% finance is provided by the Council (*Refer page 13,14*).

3. Service conditions/Career Advancement of KVK Scientists

Looking at the present disparity in service conditions of Heads and SMSs working in SAUs/States/NGOs KVKs, it is recommended that the ICAR Headquarters may take-up this issue on priority to ensure similarity in service conditions including age of superannuation, experience

recognition, career advancement, parity in scales and post retirement benefits to inspire and motivate the scientists to put-in their best (*Refer page 23*).

4. Monitoring of KVKs by ICAR-ATARI and Heads of host organizations to improve their performances

The existing system of technology back-stopping by the Director of Extension Education of the SAUs needs to be reviewed to fulfill the regular monitoring and technology back-stopping. Director ATARI needs to strengthen the monitoring system at the Institute level and organize at least one meeting half yearly with the DEEs and Heads of the Host organization and take appropriate concurrent measures (*Refer page 78*).

5. Focus Area (s) of KVKs must be distinctly emphasized

Director ATARI may ensure that for every KVK there are a few focus areas as per location specific needs and FPOs and SHGs, including rural women are imparted long-term skill development training and provided necessary guidance and support to ensure long-term sustainability (*Refer pages 38, 42, 47, 52, 54, 66, 67, 70*)

6. Capacity building of KVKs ranked as 'C in a study by NILER&D (An autonomous Institution under NITI Aayog) sponsored by ICAR

Director, ATARI may arrange an intensive interactive meeting of Heads and SMSs of the KVKs whose overall performance was ranked as 'C' to find out the reasons of low rank and arrange for their capacity building to perform better by interactions with the KVKs ranked as 'A' , preferably in the next three months (*Refer page 75, 76*).

7. Additional Demonstration Units at the KVKs and a museum at ATARI

As knowledge is the driving force for rational decisions, in addition to the existing Demonstration Units, the ICAR may sanction two additional demonstration units (Integrated Farming System, Hydroponics, and Nutritional garden - any two) in all the KVKs, and a museum depicting different innovative technologies at Headquarters of ATARIs (*Refer page 23*).

8. More emphasis on training of extension personnel

Director ATARI may specifically involve the State Development Departments for training of extension personnel in frontier areas. Further, such training, instead of one day, should be with more emphasis on practical exercises and interactions rather than lectures only (*Refer page 47*).

9. Seed hub-seed village promotion by KVKs

To ensure availability of quality seeds, planting materials, while finalizing the Action Plan, the Director ATARI may ensure that every KVK focuses on this important activity, to generate more income at the village level. The KVKs which have excelled in this area be encouraged to share their experiences, especially the process followed, with the other KVKs in the State (*Refer page 66*).

10. Resource generation by KVKs from other than ICAR organizations of similar functions

The Council is emphasizing on income generation by getting financial support from agriculture related institutions, including Corporate Houses. Though a few KVKs are already actively doing this, yet, Director ATARIs must ensure that at least 10 % of additional financial support is achieved by all KVKs from outside agencies. The resources so generated be used for creation of infrastructure at the KVK (*Refer page 73*).

11. Capacity Building / updating the knowledge of KVK Scientists

A specific plan of action be prepared by the Director ATARIs for deputing the KVK scientists for participation in summer/winter schools, Seminar/Symposia etc. organized by the professional societies within the country and other international programmes. This action plan be approved by the DDG (Agricultural Extension), ICAR and a suitable budgetary provision may be made (*Refer page 20*).

12. Farm Mechanization for drudgery reduction in farm operation – KVKs initiatives

Director ATARIs may ensure that every KVK in its jurisdiction organizes at least two institutional trainings, on-hand experience in use of an appropriate farm machinery and implements. Further, the specific tools and implements required for that district may be made available on custom-hiring basis and the KVK may facilitate the same through Private -Public Partnership (*Refer page 38*).

13. Functional linkages/collaboration of KVKs with state development departments/ICAR institutions/SAUs/Central organizations/NGOs

KVKs must maintain and make functional linkages with other central/state development departments, organizations with focus on agriculture and rural development to energize the synergistic effect for effective and efficient empowerment of all stakeholders (*Refer page 73*).

14. Ensuring ICAR annual sanctioned budget and special grant reaches the KVK

The Director ATARI may take necessary initiatives to ensure that the allocated budget and special grant provided to the concerned Administrative Head of SAUs/State Governments reaches to their KVKs in time. (*Refer page 18*).

15. ATARI's representation in staff recruitment and transfer in KVKs of SAUs

ICAR is financing the KVKs under the SAUs/CAUs and no representative from the ATARIs is included in their Selection Committee. It is recommended that the Council may consider revoking of its earlier order in this effect and includes the concerned Director ATARI as one of the Members of the Selection Committee. Similarly, before transferring a Head/SMS of KVK consent of the concerned ATARI may be obtained (*Refer page 15*).

16. KVK scientists may be kept free from activities imposed by the State Governments

The Council may address a communication to the concerned State Governments, that this Institution is having specific mandate and an action plan for implementation, and therefore no activity, which is not as per mandate, be assigned without the approval of the Council (*Refer page 24*).

17. Additional Scientific, Technical and Supporting staff at ATARI Headquarters

Because of increased programmes, along with research component being added, it is recommended to provide additional Scientific, Technical and Supporting staff (Preferably 4 Scientists, 9 technical and 6 supporting) at the ATARI Headquarters (*Refer page 13 & 14*).

The QRT is fully convinced and sincerely feels that if the recommendations are effectively implemented and put into action, the KVKs will be instrumental in ensuring food and nutritional security and will become a more effective and vibrant Institution at District level leading to Nation's growth.

Few Glimpses of QRT visit

Meeting of QRT Members with Directors ATARIs and DEEs at ATARI Kolkata

KVK Nadia demo unit visit

Portable fish breeding chamber at SS KVK Narendrapur

Interview of QRT by Doordarshan

Vist to UBKV and KVK Coochbehar

Farm visit of KVK Puri

Mushroom demo unit at KVK adopted village in Dhenkanal

Summing up meeting of KVKs of Odisha

Farm visit of KVK Khordha

Interaction with Director & staff, ICARI and senior officials of line dept. in Port Blair

Visit to adopted village at N & M Andaman

Visit to dragon fruit farmer at Kisangunj

QRT visitng ANKURAN unit ar Purnea

Award winning IFS unit at KVK Bhagalpur

Meeting with VC, Dean & Directors of BAU, Sabour and senior state level officials

Video confencing facility at DEE, BAU Sabour

Apiary unit of KVK Samastipur

Meeting with VC, Dean & Directors of BAU, Ranchi and senior state level officials

Farm visit of KVK Gumla

Visit to Divyayan KVK at Ranchi

DC Deoghar briefing QRT about activities of KVK Deoghar

Vermicompost made from floral waste of Shri Baidyanath Dham Deoghar

Summing up meeting of KVKs of Jharkhand

Summing up and finalization of report of QRT at ATARI Kolkata

ANNEXURE-I

INDIAN COUNCIL OF AGRICULTURAL RESEARCH
AGRICULTURAL EXTENSION DIVISION
Krishi Anusandhan Bhawan-I, New Delhi - 110 012 INDIA

F.No. A. Extn. 9/19/2019-AE-II Dated the 19th June, 2019

OFFICE ORDER

The Secretary (DARE) & DG, ICAR has been pleased to constitute a Quinquennial Review Team (QRT) consisting of the following in respect of Agricultural Technology Applications Research Institutes (ATARIs) and Krishi Vigyan Kendras (KVKs) of ATARI, Patna and ATARI, Kolkata for the period from 2011-12 to 2018-19. The composition of QRT is as follows:

Name & Designation	**Chair/ Member**
Dr. R.K. Samanta, Former Vice Chancellor, BCKVV, Mohanpur, West Bengal	Chairman
Dr. C.M. Singh, Former Director of Extension, NDUA&T, Faizabad	Member
Prof. C. Satpathy, Former Dean Extension , OUAT, Bhubaneswar	Member
Dr. R. B. Sharma, Former Director of Extension Education, IGKV, Raipur	Member
Dr. Y.V. Singh, Former Director, ICAR-ATARI, Jodhpur	Member
Dr. F.H. Rahman, Principal Scientist, ICAR-ATARI, Kolkata	Member Secretary

The terms of reference of the QRT are as under:

a). To review the KVK programmes and activities and their relevance, keeping in view the identified and prioritized farmers needs of the area.
b). To assess the superiority of the technology/products demonstrated on the farmer's fields through on-farm trials and frontline demonstrations.
c). To access the efforts made in transfer of technology through training of farmers and extension personnel, extension activities, and production of seeds and planting materials and other technology inputs.
d). To evaluate the innovative extension methodology developed and the procedures adopted by the KVKs to prioritize, monitor and assess the impact of programmes.
e). To suggest a road map for KVKs to work as single window knowledge, resource and capacity development centre in the district.
f). To assess the existing provision for manpower and infrastructure in KVKs and ATARIs in view of their roles and responsibilities; review the monitoring, coordination, overseeing, liasioning, reporting, budgeting, technology flow and backstopping mechanisms; and
g). To suggest measures for organizational and administrative changes for strengthening and overall improving the visibility and efficiency of KVK system.

Cont...

The mode of operation of the Committee will be mostly based on progress of KVKs, travel workshops including essential field visits, discussions with KVKs, ATARIs and host organizations and ICAR Hqrs. and draft presentation before the finalization of the report. However, the Directors of ATARIs, Patna and Kolkata shall provide all the logistics for the visits, meetings, compilation of proceedings and final report of the Team and ADGs in the Agricultural Extension Division will facilitate in the overall coordination of the work of the QRT.

The QRT will submit its report with recommendations within a period of six months. The TA/DA and honorarium to the Chairperson and Members of the QRT will be met as per the existing ICAR norms out of the budget of the ATARI, Kolkata wherever the QRT visits during the review period in these zones.

19/06/19

(V.P. Chahal)
Asstt. Director General (AE)

Distribution:

1. Chairman and all Members of the QRT.
2. Directors of ATARI, Patna and Kolkata.
3. ADG (PIM), ICAR, Krishi Bhawan.
4. PPS to DDG (AE), ICAR for information of DDG (AE).
5. PA to ADG (AE-VPC) and ADG (AE-RS).
6. Deputy Secretary (AE)/Under Secretary (AE).

भारतीय कृषि अनुसंधान परिषद्
INDIAN COUNCIL OF AGRICULTURAL RESEARCH
कृषि अनुसंधान भवन–1, पुसा, नई दिल्ली–110012
Krishi Anusandhan Bhawan, Pusa, New Delhi – 110 012
Ph.:25840184, FAX: 25842968

F.No.A.Extn.9/19/2019-AE.II Dated: 25.11.2019

OFFICE ORDER

In partial modification of the Officer Order of even number dated the 19th June, 2019 (copy enclosed), approval of Secretary, DARE & Director General, ICAR, is hereby conveyed for nomination of Dr. R. Prashad, Former ADG (AE), ICAR, in place of Dr. C.M. Singh, Former DEE, Narendra Dev University of Agriculture & Technology, Faizabad (UP), in the Quinquennial Review Team (QRT) in respect of Agricultural Technology Applications Research Institutes (ATARIs) and Krishi Vigyan Kendras (KVKs) of ATARI, Patna and ATARI, Kolkata for the period from 2011-12 to 2018-19. The other contents of the Office Order of even number dated 19.06.2019 remains same.

25/11/19

(V.P. Chahal)
Assistant Director General (AE)

Distribution:

1. Chairman and all Members of the QRT.
2. Dr. R. Prashad, Former ADG (AE), ICAR.
3. Dr. C.M. Singh, Former DEE, Narendra Dev University of Agriculture & Technology, Faizabad (UP), for information please.
4. Directors of ATARI, Patna and Kolkata.
5. ADG (PIM), ICAR, Krishi Bhawan, New Delhi.
6. PPS to DDG (AE), ICAR, for information of DDG (AE).
7. PA to ADG (AE-VPC) and ADG (AE-RS), ICAR.
8. Deputy Secretary (AE)/Under Secretary (AE).

ANNEXURE II

Action Taken Report on Last Quinquennial Review Team
Period covered: 2005-06 to 2010-11

Sl. No.	Recommendations	Action taken
1	Additional three units and Zonal Project Directorate as an Institution (Sl. No. 1 & 2 of last QRT)	Zonal Project Directorate has been upgraded to Agricultural Technology Application Research Institute on July 2015 and three more ATARIs have been formed by the Council.
2	HRD programme for KVK personnel, Induction training and visit to awarded KVK (Sl. No. 6 & 10 of last QRT)	HRD programme for KVK personnel are being conducted regularly at ATARI and Directorate of Extension level. The two ATARIs have conducted 143 HRD progrmmes involving about 5700 KVK personnel during 2011-12 to 2018-19. Scientists of ATARI regularly visits to awarded KVKs.
3	Technological backstopping to NGO KVKs by SAUs (DEE) (Sl. No. 3, 4, 8 & 23 of last QRT)	Technological backstopping to 11 NGO-KVKs of both the ATARIs by the Directorate of Extension Education of SAUs of the respective area.
4	Exposure visit for farmers by KVKs and Farmers-to-farmer extension should be given adequate importance by all the KVKs (Sl. No. 11, 27, 29 & 48 of last QRT)	Every KVK has conducted Exposure visit for farmers by KVKs Regularly done. More than 700 exposure visits of farmers and extension officials to various institutes/organization at state and national level have been conducted by the KVKs during 2011-12 to 2018-19. The KVKs, through innovative extension approaches like, Master farmer development, leadership development (Refer to page 58), have developed skills and leadership abilities of about 950 farmers who are fruitfully disseminating profitable technologies to their fellow farmers in large scale.
5	Special incentives to remote KVK's staff (Sl. No. 49 of last QRT)	The issue was discussed at Council level but not yet implemented
6	Uniform service conditions across of all host organization (Sl. No. 14 of last QRT)	The issue was discussed at Council level but not yet implemented
7	Acquiring 10.0 ha land for establishing new KVK instead of 20.0 ha (Sl. No. 21 of last QRT)	Consequent upon this recommendation and subsequent reiteration by the High power Committee appointed by ICAR in 2015 for reviewing KVK's guidelines, the norm is now being followed and 11 new KVKs have been established following the norm.
8	Procurement/ replacement of vehicle for KVK should be prioritized and two wheelers may be provided to all KVKs (Sl. No. 24 of last QRT)	All new KVKs (11 nos.) have been provided with new vehicle while replacement of old vehicle in 39 KVKs have been done.
9	For remote KVKs, staff quarter may be increased to accommodate all the staff (Sl. No. 13 & 25 of last QRT)	The issue was discussed at Council level but not yet implemented

10	FLDs may be reported by all KVKs with detailed account of variety, technology and other components (Sl. No. 42 & 45 of last QRT)	Duly followed by all KVKs as per revised format of Annual Report made by the ATARIs
11	Product diversification and value addition by Home Scientist (Sl. No. 31, 41 & 43 of last QRT)	Home Scientists of KVKs regularly take up programmes in this aspect. Also KVKs have developed a number of women SHGs and equipped them with technologies for development of diversified value added products of crops, mushrooms, animal products, etc. who have now established their own profitable entrepreneurship. Notable among these is KVK North Dinajpur who have developed a low cost nutritious weaning food from locally available materials which is now being promoted by the State Integrated Child Development Scheme throughout the district.
12	KVKs should produce the seed of improved/ important crop varieties, high value crops and medicinal and aromatic plants etc. seed processing plants needs to be provided at central places of different agro-climatic zones (Sl. No. 44 & 51 of last QRT)	All KVKs produced seeds of improved/important crop varieties, high value crops and medicinal and aromatic plants etc. and provide to the farmers and other stakeholders. Huge quantities of seed/planting materials have been produced by the KVKs during 2011-12 to 2018-19 generating revenue to the tune of Rs. 149 crores. Total of 31 KVKs (11 in WB and Odisha and 20 in Bihar and Jharkhand) have been provisioned for establishment of seed hub since 2011-12.
13	Women empowerment may be given due importance by all KVKs (Sl. No. 17, 31 & 36 of last QRT)	Duly followed. Women folk are important clientele in imparting trainings and demonstration in various enterprises. Number of such rural women have bagged prestigious awards (Refer to Page 72, 72)from State or National agencies and standing out from all was Mrs. Rajkumari Devi of Mujaffarpur, who was coroneted **PADMASHREE** by the Hon'ble President of India.
14	KVKs should maintain agricultural data base for providing quality information to farmers about ongoing schemes / programmes, authentic input centers, market related information etc. (Sl. No. 34, 35 & 52 of last QRT)	All KVKs have developed agriculture technology data base of available profitable technologies and display of the same in KVK or in vantage places for perusal of maximum number of farmers. Apart from this, KVKs used to send this information in advisory mode to farmers and other stakeholders using ICT tools like, social media, internet, mobile phones and mKisan portal.
15	Sending feedback by KVKs on the assessed / demonstrated technologies to the research organizations (Sl. No. 15, 30 37, 40 & 54 of last QRT)	Farmers' feedback has been made mandatory in reporting achievement of OFT/FLD in the report format. All KVKs followed the format while submitting reports. These are transmitted to the research organizations by the KVKs or through ATARIs by making compendium of them.

16	Custom hiring system in KVKs should be implemented for popularizing farm mechanization (Sl. No. 50 of last QRT)	KVKs involved in NICRA programme are implementing custom hiring system for benefit of the farmers for ease of operation and drudgery reduction. About 25 lakh have revenue has been generated through custom hiring of implements by the Village Climate Risk Management Committees, who control the CHCs, formed under NICRA adopted villages.
17	Identification and documentation of innovations available in the districts (Sl. No. 33, 38, 39, 46, 47, 55 & 56 of last QRT)	Innovative farmers in the respective district are being documented by KVK. These innovations have been documented at the KVK level as well as in compendium mode at ATARI level. Some of the KVKs and the two ATARIs have regularly organised Innovative Farmers meet in collaboration with National Innovation Foundation, an autonomous organization under Govt. of India formed in 2014, for benefit of framers and other stakeholders.
18	KVK scientists may be provided training on documentation skill (Sl. No. 6 & 12 of last QRT)	Two ATARIs in conjugation with SAUs, SAMETIs have conducted about 25 trainings for development of documentation skills of SMSs of all KVK
19	Enhancing the visibility of the KVKs at state and national levels (Sl. No. 9, 20, 32, 59 & 60 of last QRT)	KVKs have become much more visible at state and national level and huge non-mandated activities are thrust upon the KVKs by various agencies.
20	Reaching fund to KVKs from ZPD through host organizations should be fast and sanctioning power of Programme Coordinators must be at per with the Head of ZARS (Sl. No. 61 of last QRT)	The issue has already been conveyed to all host organization and barring one or two cases it is being followed by the Host organizations. However, Heads of KVKs, unlike those in North East region, have not been delegated sanctioning power at par with Head of ZARS.
21	Budget for meals and refreshment for KVK training may be increased by three folds and contingency grant may be to the tune of Rs. 20-25 lakh per KVK per annum (Sl. No. 63 of last QRT)	The issue was discussed at Council level but not yet implemented
22	Infrastructure of KVKs like threshing floor, godown and fencing etc. may be provided with adequate funding (Sl. No. 18, 62, 64 & 65 of last QRT)	Almost all the KVKs have been provisioned for fund forcreating these sorts of infrastructures
23	KVK building should be extended by 300 sq. mt. to the needy KVKs, on priority. (Sl. No. 7 of last QRT)	The issue was discussed at Council level but not yet implemented
24	The involvement of Zonal Project Directorate is restricted in respect of recruitment of KVK staff under NGO KVKs only which needs to be expanded in SAU run KVKs also. (Sl. No. 5 & 22 of last QRT)	The issue was discussed at Council level but no instruction has been received from Council.

25	Vacancies in KVKs must be filled up without delay. Staff should not be transferred before five years of service in a particular KVK (Sl. No. 16, 19 & 28 of last QRT)	Compared to 26 filled up positions of Programme Coordinators (33 %) in 78 KVKs of WB, Bihar and Jharkhand in 2011, presently 60 such positions (65 %) in 92 KVKs are filled up in the three states and A & N Islands. Appointment to SMS and other posts are being filled up rapidly by all host organizations other than ICAR, following directives of ATARI. ICAR is streamlining the recruitment process and vacant positions in ICAR KVKs will be filled up shortly.
26	Animal husbandry demonstration units to the KVKs should be provided in totality for the benefit of the farmers. (Sl. No. 26 of last QRT)	Animal husbandry demonstration units have been established in 92 KVKs on dairy/goatary/piggery/poultry/duckery etc.
27	All the KVKs should develop integrated farming system both at KVK farm and in the farmers' field. (Sl. No. 53 of last QRT)	All the KVKs have developed location specific suitable IFS units either in their instructional farm or in farmers' fields (in case of KVKs not having requisite land). IFS unit with KVK Bhagalpur in Bihar has been adjudged best in the country and they have bagged National award for the same.
28	Number of flagship programmes like maize improvement, special pulse demonstration programme, NICRA, fodder production etc. which needs to be encouraged to enhance the visibility of KVKs at state and national level. (Sl. No. 57 of last QRT)	A number of Flagship programmes like, ARYA, MGMG, seed hub, CFLDs on oilseeds and pulses, NICRA, tribal sub plan, KKA, skill development training under PMKVY, CSISA, District Agro-met units under GKMS, KSHAMTA, Farmers first, NEMA, RAWE, NARI, VATICA and DAESI are in vogue in the two ATARIs. All the KVKs have been entrusted with three or more of the above programmes and have generated wide impact in the district (Refer to page no 55, 56 of report)
29	Action plan the KVK must consult SREP and CDAP of concerned KVK district to have a comprehensive plan of action. (Sl. No. 58 of last QRT)	Since 2014, as per directives of DAC & FW, Govt. of India, KVKs are entrusted to chalk up SREP and CDAP of District and, *per se,* since then KVKs Action Plan envisaged the earmarked areas in SREP and CDAP.

Annexure III

Visit details of the QRT:

ATARI Kolkata:

Date	Venue	Activities
West Bengal (23 KVKs)		
Phase I (19.07.19 – 20.07.19)		
19.07.2019	ATARI Kolkata	• Inaugural meeting of QRT Members • Meeting for interaction with DEEs of all SAUs of Kolkata and Patna Zone
20.07.2019	• Nadia KVK, Gayeshpur • NDRI ERS, Kalyani	• Visit to KVK Nadia (BCKV) at Kalyani. • Interaction with VC/DEE, BCKV, Senior Officials of Line Deptt. of the district • Visit to village Bhabanipur, Haringhata • KVKs presentation of activities (4 KVKs)– Nadia (BCKV), Hooghly (BCKV), Howrah and (BCKV), Purba Medinipur (BCKV) • Visit to KVK Nadia (Addl) under NDRI ERS, Kalyani and Interaction with Director, NDRI, Karnal; Head & Scientists NDRI ERS Kalyani; KVK Head
Phase II (19.08.19 – 25.08.19)		
19.08.2019	WBUAFS, Kolkata	• Interaction with VC/DEE, WBUAFS, Senior Officials of Line Deptt. of the different districts • KVKs presentation of activites (6 KVKs)– Mursidabad (WBUAFS), Jalpaiguri (WBUAFS), N 24 Pgs (addl) (CRIJAF), Burdwan (CRIJAF),Rathindra KVK Birbhum (Viswabharati University), Bankura (CADC, GoWB)
20.08.2019	• KVK North 24 Parganas, Ashokenagar	• Visit to KVK N 24 Pgs and Interaction with DEE, WBUAFS, Senior Officials of Line Deptt. of the district • Visit to village Kankpur, Ashoknagar
21.08.2019	• KVK South 24-Parganas (addl.), Narendrapur	• Visit to KVK Narendrapur • Interaction with VC-RKMVERI/Secretary, RKM Narendrapur/Director-SAMETI, ATC & Line Dept officials of the district • KVKs presentation of activities (5 KVKs)– Narendrapur (RKMVERI Belurmath), Mursidabad (addl) Sargachi (RKMVERI Belurmath), Nimpith (RK Ashram-NGO), Jhargram (Sevabharati-NGO), Purulia (Kalyan- NGO)
22.08.2019	Uttar Dinajpur KVK	• Visit to KVK Uttar Dinajpur and interaction with VC/DEE UBKV, KVK's staff, Farmers and Senior Officials of Line Dept. of the district
23.08.2019	UBKV, Coochbehar and KVK Coochbehar	• Interaction with VC/DEE-UBKV, KVKs and Senior Officials of Line Dept. of the district • Visit of KVK Coochbehar • KVKs presentation of activites (5 KVKs)– Coochbehar, Kalimpong, Dakshin Dinajpur, Malda (UBKV), Malda (addl) (under CISH Lucknow)
24.08.2019	Adopted Village Visit	• Visit to adopted Villages Rajarhat and Baneshwar
25.08.2019	KVK Jalpaiguri	• Visit to KVK Jalpaiguri • Interaction with DEE WBUAFS, KVK's Staff and Senior Officials of Line Dept. of the district • Visit to adopted village Murti Dhupjhora

Odisha (33 KVKs)		
Phase I (05.09.19 – 09.09.19)		
05.09.2019	OUAT, Bhubaneswar	• Meeting and interaction with Vice Chancellor, DEE, OUAT and Senior Officials of Line Departments
05.09.2019	KVK Khordha	• Visit to KVK Khordha under ICAR-CIFA • Interaction with Director/Scientists, CIFA and various stakeholders
06.09.2019	KVK Jharsuguda	• Visit to KVK Jharsuguda and Interaction with DEE, OUAT & Senior Officials of Line Deptt. and Agri-entrepreneurs of KVKs-Jharsuguda and Sundargarh-I districts • KVKs presentation of activites (2 KVKs)- Jharsuguda, Sundargarh-I • Visit of farmers' field at Bhoimunda village and Interaction with farmers and farmwomen
07.09.2019	KVK Bargarh	• Visit to KVK Bargarh and Interaction with Officials of Line departments & Agri-preneurs of Bargarh Distict, • KVKs presentation of activites (3 KVKs) – Bargarh, Bolangir,Doegarh
08.09.2019	KVK Sonepur	• Visit to KVK Sonepur KVK and Interaction with Senior Officials of Line Departments and Agri-entrepreneurs of the Sonepur district. • KVK presentation of activites (2 KVKs)- Sonepur, Boudh
08.09.2019	KVK Angul	• Visit to KVK Angul and Interaction with Head and other staff of KVK
09.09.2019	KVK Dhenkanal	• Visit to KVK Dhenkanal • Interaction with Senior Officials of Line Departments and Agri-entrepreneurs of the Dhenkanal district. • KVKs presentation of activites (3 KVKs)– Dhenkanal, Angul, Cuttack • Visit to adopted villages Lambodarpur and Gohirakhal
Phase II (27.09.19 – 30.09.19)		
27.09.2019	KVK Bhadrak	• Visit to Bhadrak KVK and Interaction with Senior Officials of Line Deptt. and Agri-entrepreneurs of the districts of Bhadrak, Jajpur and Balasore • KVK presentation of activities (3 KVKs) – Bhadrak, Balasore,Jajpur • Visit to KVK Balasore
28.09.2019	OUAT, Bhubaneswar	• Visit to Puri KVK and Interaction with Senior Officials of Line Deptt. and Agri-entrepreneurs of the districts of Puri • KVKs presentation of activities (8 KVKs)- Puri, Ganjam 1, Ganjam 2, Gajapati, Jagatisnghpur, Kandhamal, Kalahandi, Kendrapara
29.09.2019	OUAT, Bhubaneswar	• KVKs presentation of activities (11 KVKs)- Keonjhar, Korapur, Mayurbhanj 1, Mayurbhanj 2, Malkangiri, Nabarangpur,Nayagarh, Nuapara, Rayagada, Sambalpur, Sundargarh 2
30.09.2019	OUAT, Bhubaneswar	• Summing up meeting for Odihsa KVK's review • Interaction with VC/DEE/ and other Senior Officials of OUAT and all Heads of KVKs of Odisha
Andaman and Nicobar Islands (3 KVKs) – 01.11.19 to 05.11.19		
01.11.2019	CIARI, Port blair	• Meeting and Interaction with Director, ICAR-CIARI, Senior Officials of Line Deptt./ Agri-entrepreneurs/Bank Officials/DD/AIR of Port Blair • KVKs presentation of activities (3 KVKs) – Port Blair, N & M Andaman, Nicobar

02.11.2019	Adopted Village of N & M Andaman KVK	• Visit to adopted village Nayagarh
03.11.2019	Adopted Village of Port Blair KVK	• Visit to adopted villages – Gobindanagar and Radhanagar
04.11.2019	KVK Port Blair	• Interaction with Director/Staff of KVK/Farmers
Bihar KVKs (39 KVKs)		
Phase I (21.11.19 – 26.11.19)		
21.11.19	KVK Kisangunj	• Visit to DKAC Kisangunj • Visit to adopted villages Thakurgunj, Sindiakulamoni and Gachpara • Visit to KVK Kisangunj • KVKs presentation of activities (2 KVKs)- Kisangunj, Katihar • Interaction with stakeholders, line department officials and Agri-entrepreneurs
22.11.19	KVK Purnea	• Visit to KVK Purnea • Visit to BPSAC, Purnea • Interaction with VC/DEE BAU Sabour, various stakeholders, line department officials and Agri-entrepreneurs • KVKs presentation of activities (2KVKs)- Purnea, Araria
23.11.19	BAU, Sabour	• Meeting with University Administration & other Stakeholders • Interaction with farmers through Video Conference • Visit CRS (Green FM) Radio Station • Visit to KVK Bhagalpur
24.11.19	BAU, Sabour	• Discussion with CAFT and CRAP participants • KVKs presentation of activities (16 KVKs)- Aurangabad, Rohtas, Jehanabad, Madhepura, Khagaria, Patna, Supaul, Saharsa, Banka, Munger, Shikhpura, Nawada, Arwal, Lakhisarai, Nawada, Gaya
25.11.19	KVK Lakhisarai	• Visit to KVK Lakhisarai
25.11.19	KVK Nalanda	• Visit to KVK Nalanda and • Interaction with stakeholders • Visit to adopted village Panditpur
26.11.19	KVK Gaya	• Visit to KVK Gaya • Interaction with stakeholders • Visit to adopted village Sheikaara
Phase II (09.12.19 – 13.12.19)		
09.12.2019	BASU, Patna	• Meeting and interaction with VC & DEE, BASU; Director, ICAR-RC ER, Patna and Senior Officials of Line Deptt. of the district • KVKs presentation of activities (4 KVKs)-Bauxar, Jamui, Bhojpur, Kaimur
10.12.2019	KVK Mujaffarpur	• Visit to KVK Mujaffarpur • Interaction with stakeholders
	KVK East Champaran	• Visit to East Champara • Interaction with stakeholders • Visit to adopted villages Damodarpur and Matbanawari Chakia
11.12.2019	RPCAU, Pusa	• Meeting and interaction with VC/DEE of RPCAU Pusa, Senior Officials of Line Deptt. and various stakeholders of the district • KVKs presentation of activities (5 KVKs)-Begusarai, Siwan, Darbhanga, Sheohar, West Champaran • Visit to KVK Samastipur

12.12.19	RPCAU, Pusa	• KVKs presentation of activities (4 KVKs)- Saran, Gopalganj, Madhubani, Sitamarhi • Interaction with DEE/Senior Officials of RPCAU Pusa and all Heads of KVKs of RPCAU Pusa
13.12.19	• ICAR-NRC Litchi Muzzafarpur • KVK Vaishali	• Visit to ICAR-NRC Litchi Muzzafarpur • Visit to KVK Vaishali • Interaction with Senior Officials of Lins Deptt./farmers/entrepreneurs of Vaishali District
Jharkhand (24 KVKs) – 05.01.2020 to 11.01.2020		
06.01.2020	BAU, Ranchi	• Meeting and interaction with VC/DEE of BAU, Ranchi, Senior Officials of Line Deptt./ Bank Officials/Farmers/ Entrepreneurs
06.01.2020	KVK Ranchi	• Visit to KVK Ranchi • Interaction with various stakeholders of the district
07.01.2020	KVK Gumla	• Visit to KVK Gumla • Interaction with line Deptt. Officials/Farmers/ Entrepreneurs of Gumla & Chatra KVKs
07.01.2020	KVK Lohardaga	• Visit to KVK Lohardaga • Interaction with line Deptt. Officials/Farmers/ Entrepreneurs of Lohardaga
08.01.2020	KVK Ramgarh	• Visit of KVK Ramgarh • Interaction with line Deptt. Officials/Farmers/ Entrepreneurs of Ramgarh
08.01.2020	KVK Hazaribag	• Visit of KVK Hazaribag • Interaction with line Deptt. Officials/Farmers/ Entrepreneurs of Hazaribag
09.01.2020	KVK Deoghar	• Visit to KVK Deoghar • Meeting and interaction with DC Deoghar/DEE of BAU, Ranchi, Senior Officials of Line Deptt. and various stakeholders of the districts • KVKs presentation of activities (9 KVKs)- Bokaro, Hazaribag, Dhanbad, Dumka, East Singhbhum, Garwah, Giridih, Jamtara, Latehar
10.01.2020	KVK Deoghar	• KVKs presentation of activities (16 KVKs)- Koderma, Palamu, Chatra, Gumla, Ranchi, Sahibgunj, Saraikela, Khunti, Simdega, West Singhbhum, Ramgarh, Lohardaga, Pakur, Godda, Deoghar • Summing up meeting for Jharkhand KVK's review in presence of VC/DEE of BAU, Sabour, DEE BAU Ranchi, other Senior Officials and all Heads of KVKs of Jharkhand
Concluding and summing up meeting of QRT (06.02.2020 to 08.02.2020)		
06.02.2020	ATARI Kolkata	• Interaction with Directors, Scientists, Administrative & Accounts Staff of ATARI Kolkata and Patna • Preparation of draft report
07.02.2020		• Preparation of draft report
08.02.2020		• Finalization of Report