

Meeting of Research Advisory Committee (RAC)
ICAR- IARI, New Delhi (23rd - 24th December, 2016)

Proceedings

The RAC meeting of IARI was held on 23rd - 24th December, 2016 at Dr. M. S. Swaminathan Library Conference Hall under the Chairmanship of Dr. P.L. Gautam, Former Chairperson, Protection of Plant Varieties and Farmers' Right Authority, New Delhi, Govt. of India. The other members who participated in the research review were: Dr. C.L. Acharya (Former Director, ICAR-IISS, Bhopal); Dr. K.R. Koundal, Former Joint Director (Res.), IARI; Dr. P. K. Joshi (Director, South Asia, IFPRI); Dr. Ravinder Kaur, Director (Acting), IARI; & Dr. K.V. Prabhu, Joint Director (Research) and Member Secretary, (RAC). Joint Director (Education), Joint Director (Extension), Joint Director (Administration), Heads of Divisions & Regional Stations, In-charge of Units, Comptroller and Principal Scientist (RPM-PME) also participated in the meeting. The RAC members namely, Dr. J. S. Sandhu, Dr. B. Mishra, Dr. S. P. Ghosh and Dr. Ravi Khetrpal could not attend the meeting.

Dr. K.V. Prabhu, Joint Director (Research) welcomed the Chairman and members of RAC as well as the Project Director (WTC) & Acting Director, IARI, Dr. R. Kaur, Joint Director (Education), Joint Director (Extension), Heads of Division and Regional station, In-charges of Units and scientists of IARI.

In her address, Dr. Kaur acting Director, highlighted the significant accomplishments of the Institute in the last one year with respect to the research programmes, human resource development, agricultural extension and technology development. She emphasized that keeping in view the previous RAC recommendations; efforts were made to initiate a number of policy related issues to improve research, education and extension programmes. She informed that the institute master plan was already approved and the proposal for a one time grants of Rs. 500 crore was sent to ICAR for consideration. The proposals for development of an Accelerated Biotechnology Centre and Centre for Application of Sensors in Agriculture have been included in the proposal. The Council has already agreed for the allocation of Rs 15 crores from non plan for development and improvement of infrastructure. She mentioned that there were 48 in - house projects along with four flagship projects, operating in a school mode. She thanked all school coordinators for their monitoring.

Out of the 136 technologies shortlisted for commercialization, 48 have been consolidated for business enterprise development. With respect to solving of problems, meetings with the HODs

were convened along with administration, finance and maintenance unit personnel and were resolved. At the same time demand for additional manpower including technical, administrative and supporting staff personnel at head-quarters as well as regional stations' could not be met despite a few postings by transfers effected by the Council.

At Shimla Regional Station new labs have been established and funds have been provided for improving/repairing the residential quarters. Servers have been purchased for Agriculture Knowledge Management Unit (AKMU). Merger of FOSU and OHLU for better management of the institute was implemented. Biomass Utilization Unit (BMU) was strengthened within IARI with more autonomy within agronomy division. But, it was explained that the institute is under severe pressure for want of adequate student hostel and scientists guest house facilities. Due to increase in the number of PG students at IARI, there is an urgent need to improve the hostel accommodation which had been temporarily solved by converting a training hostel into boys hostel. Consequently, due to shortage of hostels for trainees, only one training on technology applications could be accommodated in a month and the RAC was informed that funds from ICAR were requested especially for improving hostel and other guest house facilities.

While informing the Committee about the extension activities carried out, it was explained that the Krishi mela was scaled up to Krishi Unnati Mela with the active participation by the Ministry of Agriculture and Farmers Welfares with all its departments and sufficient funding. It was informed that a Kisan Haat, a marketing activity place was being put up in place that looks up directly on to the main road, Inderpuri, so that there was a direct involvement in understanding the market related shortcomings. A positive sign of increased interest and involvement of more scientists was show cased by informing that the technological innovations were converted into patent applications through the active role played by ITMU/ZTMU.

The RAC was informed of another acquisition by IARI, the A+ accreditation received through NAAC in addition to the accreditation by the Council that was obtained earlier. On international student and educational activities, IARI continued to support the same for upgrading research in Afghanistan and Myanmar with the help of ICAR and Ministry of External Affairs. It was informed that the first batch of students from Afghanistan was assessed successfully and awarded M.Sc. degree. Besides this, 35 lecturers from Myanmar are being trained under the capacity building program through HRD.

Dr. Prabhu presented ATR on recommendations of RAC of 2015. The presentation was appreciated by the Chairman and all the RAC members for focused compilation.

The Chairman, congratulated the Director, Joint Director (Research) and all the school coordinators for the progress made by the Institute during the last one year in terms of research,

teaching, training, and extension activities. He appreciated the action taken and presentation of ATR in a brief and effective manner. He showed satisfaction that most of the suggestions / recommendations of the previous RAC have been taken into consideration. However, he felt that there was a need to have strong research linkages within and across the schools and that the relevance of research agenda needs to be linked with the problems of national importance. In this context, he mentioned that the effective monitoring, assessment and impact of research innovations / achievements may be given due emphasis and efforts be made to undertake high quality research in priority areas. It was advised that the Institute should take a lead in demonstrating the technologies developed at the farmer's fields. Congratulating the national high ranking achieved in public-private partnerships in commercialization, consultation and contract research programmes, the Committee felt that public-private partnership be further promoted and strengthened in the same mode for enhanced activity so that the benefits accruing from new innovations / technologies reach the end users.

The Chairman complimented the Postgraduate School for maintaining the increased demand by the students from all over the country in most disciplines at IARI, despite increase in the number of agricultural colleges in India that emphasized the importance of IARI among student community of the country. He pointed out that International collaboration should be started only if IARI can provide international facilities. Rejuvenation of the existing facilities was important for the institute to compete globally. Chairman also urged the scientists of IARI to plan in advance keeping in mind the anticipated demand for efficient management of the resources available or to be made available for timely solutions. He also emphasized to list out the equipment items to be phased out well in advance and to make necessary provisions for their replacement while planning budget estimates.

Conversion of the PUSA campus into the first green campus as far as the common facilities, residential complexes or office environment were concerned, among agricultural research institutions in the country was also suggested. The Chairman complimented the role played by the Regional Stations in taking care of national problems in the country so far, and termed these as the Ambassadors of ICAR in general and IARI in particular, and appreciated the attention given to regional stations. He also said that these are doing very good work in spite of lack of several facilities and manpower and recommended that these units should be effectively strengthened.

While considering farmers issues, it was mentioned that proper arrangements should be made for lodging, transport etc. whenever farmers visit the institute. ATIC was appreciated for its performance and the need to record/publish question and answer sessions at the kisanmela was emphasized. Facilities for foreign students should be improved. He also emphasized for better facilities at hostels. He suggested that a museum may come up with the obsolete

equipments/technologies depicting transition of technologies in agriculture. The Chairman also suggested that the RAC recommendations should be serially numbered school-wise and proceedings should be bound for reference and use.

Dr. C. L. Acharya, Member, RAC stated that the annual loss of Nitrogen because of poor utilization efficiency was estimated to be about Rs. 80 lakh crores. Therefore, every effort was required to be made to minimize this loss. Good quality of water was also a serious concern. It was required to enhance WUE in the era of hi tech agriculture. Proper fertilizer placement was also necessary. It was suggested that a complete balance sheet be worked out for water, fertilizers etc. and demonstrations established of different root profiles, soils, minerals and a small museum be created for the same.

Dr.K.R. Koundal, Member, RAC appreciated the presentations in terms of quantification of output in the actions carried out on the recommendations of the RAC. Further, he said that one time grant may be provided to physiology and biochemistry divisions to start work on proteomics and transcriptomics to understand the mechanism of flowering in pigeonpea and chickpea. He also emphasized the need of creation of facility for screening of abiotic stresses.

Dr. P. K. Joshi, Member, RAC suggested initiation of a flagship programme on pulses, especially chickpea and pigeon pea. He also suggested involvement of social scientists in soil health, water efficiency and farm mechanization programmes. He was of the opinion that we should now move to digital information dissemination instead of post office programme. There should be flagship programme on impact studies of research projects. Under capacity building, young scientists should go abroad in frontier areas to developed countries for exposure.

Dr. R. K. Jain, Dean and Joint Director (Education) pointed out that there was no dedicated overseas-associateship programme which is needed for faculty upgradation and each scientist should get exposure to state of the art facilities/laboratories. There should be some seed grant at the time of initial joining of scientists so that basic facilities may be provided to him. The RAC observed that ICAR may be approached for both these issues which are very pertinent.

Ms. S. Razdan, Joint Director (Administration), apprised the committee about the ERP system of the institute which included activities like pay roll, leave, online e-market, Rajbhasha and Swacch Bharat Abhiyan.

Mr. S. Bilgrami, Comptroller presented the budgetary position of the institute and also interacted on the ATR issues. Dr. CL Acharya asked for speedy settlement of the claims of scientists/pensioners such as TA, medical etc. Pensioners should be served properly. Dr. Koundal said audit should support scientists in clearing of files and processing of bills. Mr. Bilgrami clarified that finance is a facilitator, hence no peace meal objections are entertained and bills get delayed due

to lack of manpower. Further, he informed that funds under repair and maintenance are meager. The Chairman asked comptroller to sort out such issues, to motivate staff and inculcate positive attitude towards scientific staff. He suggested guest lectures by inviting experts from institute like NIFM.

After the remarks of the members, the Chairman observed that the action taken report on most of the recommendations of the previous RAC was satisfactory and properly projected and ratified the proceedings of previous RAC.

After extensive discussion on ATR, detailed school wise presentations were made by the School Coordinators /Head of Divisions. In all, salient research achievements of six schools were presented: School of Crop Improvement (Dr. A.K. Singh, Head, Division of Genetics& Coordinator, Crop Improvement), School of Horticultural Science (Dr. S.K. Singh, Head, Division of Fruits and Horticulture Technology), School of Natural Resource Management (Dr. R. Kaur, Project Director, WTC& Coordinator, NRM), School of Crop Protection (Dr. Uma Rao, Head, Division of Nematology and Coordinator Plant Protection School), School of Basic Sciences (Dr. C. Viswanathan, Head, Division of Plant Physiology and Coordinator Basic Sciences School) & School of Social Sciences (Dr. Premlata Singh, Head (Acting) Division of Extension& Coordinator, Social Sciences).



RAC meeting in the Library Conference Hall of IARI

After presentation of significant research achievements of various schools by the respective School Coordinators & HODs, discussions on each of the school presentations were held. All the RAC members appreciated the presentations.

School-wise Recommendations

I. Research

a) School of Crop Improvement

1. More emphasis needs to be laid on strategic research keeping in view the priorities of national and international importance including nutritional quality enhancement in addition to the applied research on technological innovations.
2. More efforts are needed to work out the genetic control of the biotic and abiotic stress resistance for isolation/characterization of the gene(s) or QTLs responsible on priority in crops where successful breeding interventions have not been possible.

b) School of Horticultural Sciences

1. Modalities should be worked out in consultation with Director (Horticulture) of states for release of state varieties in horticultural crops.
2. Edible vegetable seeds such as pumpkin should be analysed for nutritional qualities and processing possibilities be explored for the potential ones. Seed of vegetable as breakfast ingredient must be considered.

c) School of Natural Resource Management

1. The mechanism of increased harvest index and other physiological traits by use of Pusa Hydrogel should be worked out under limited irrigation or rainfed conditions.
2. The mode of action (physical and biological) and basis of sustainability of waste water treatment plant is not yet worked out, a requirement for it to be commercialized/replicated.
3. There is a need to make a water and Nitrogen balance sheet and shift from recommended dose of fertilizer for traditional and conservation agriculture, with an emphasis on water saving strategies and fertilizer placement method.
4. To avoid labour and transportation, methods should be devised for degrading crop residues *in situ* i.e. where it falls.

d) School of Crop Protection

1. The technologies having potential for commercialization should be highlighted for better visibility and dissemination. We must try to commercialize the technology timely like private sectors Commercialize their technologies.
2. Need based problems having wider implications like whiteflies and their resistance to many pesticides or nematodes in vegetable crops must be addressed, with an emphasis on developing nematicidal formulations for major crops like DSR, rainfed wheat, maize, bajra etc.

e) School of Basic Sciences

1. Genotypes which use Nitrogen efficiently should be identified and their metabolic pathways, genomics and physiological adaptations at molecular level involved in NUE should be studied in collaboration with soil scientists.
2. Research work on proteomics and transcriptomics to understand the mechanism of flowering in pigeonpea and chickpea should be strengthened for enhancing the pulse productivity.
3. Field facility for screening the abiotic stress should be created and validation of the pot culture experiments requires to be done under field condition for all the experiments for getting realistic results.

f) School of Social Sciences

1. The impact assessment and technological efficiency of programmes should be studied along with e-marketing related studies on pricing and quality issues.
2. Efforts for out scaling of technologies through PPP mode be made so that impact is on larger scale in short time.
3. The study of seed chain from research to farmer's field is important. Network on selling of seeds should be established for its strengthening.
4. The feedback on the learning from farmers should be collated and published based on farm size (small, medium, large), farming system (sole, mixed, inter cropping), input type (organic, inorganic), resources availability (rich, poor), water (irrigated, rainfed), type of cultivation (open field, protected), crop (field crop, vegetable, flowers, fruits) for better interpretation of results.

II. Post Graduate School

A brief presentation of PG School activities was made by Dr. R.K. Jain, Dean & Joint Director (Edn.). The RAC members appreciated the PG school activities presented and made the following recommendations.

1. RAC opined that ICAR should be approached for provision for utilizing HRD funds for Post Doctoral fellowship and international visits by scientists, funds for dedicated overseas-associateship programme for faculty upgradation and one time seed grant for newly joined scientists.
2. The Need of more funds for carrying out practical and better hostel facilities was emphasized.

III. Administration/ Finance

1. Changes made in financial management for its betterment during the last year should be presented.
2. Tracking/monitoring of files movement should be adhered to. Piecemeal objections should be discouraged.
3. Guest lectures by inviting experts from institute like NIFM may be arranged for DDOs, finance and audit personnel.

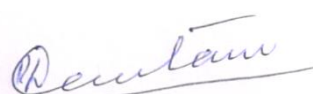
Dr. Ravinder Kaur, Director (Acting), thanked Chairman RAC & all RAC members for sparing their valuable time to participate in the RAC meeting and giving useful suggestions for streamlining and strengthening the research and teaching programmes of the Institute. She assured the committee members that all recommendations will be addressed properly by making mid-term corrections and redefining the ongoing research programmes for better research outputs.

In the end, Dr. K.V. Prabhu, Joint Director (Research) proposed a vote of thanks to the Chairman and members of RAC for participating in the meeting and offering useful advice and suggestions. He appreciated the efforts made by all the school coordinators and other presenters in compiling and synthesizing the salient research accomplishments of the respective schools and for impressive presentations. Thanks were also extended to Joint Director (Education), Joint Director (Extension), Comptroller, Heads of divisions and regional stations and Unit in charges for their active participation in the meeting. Lastly, he acknowledged the excellent help rendered by the scientific, administrative & supporting staff of PME Unit and personnel sections of Joint Director (Research) / Director for arranging the meeting.

The meeting ended with a vote of thanks to the Chair.



(K.V. Prabhu)
Member Secretary



(P.L. Gautam)
Chairman