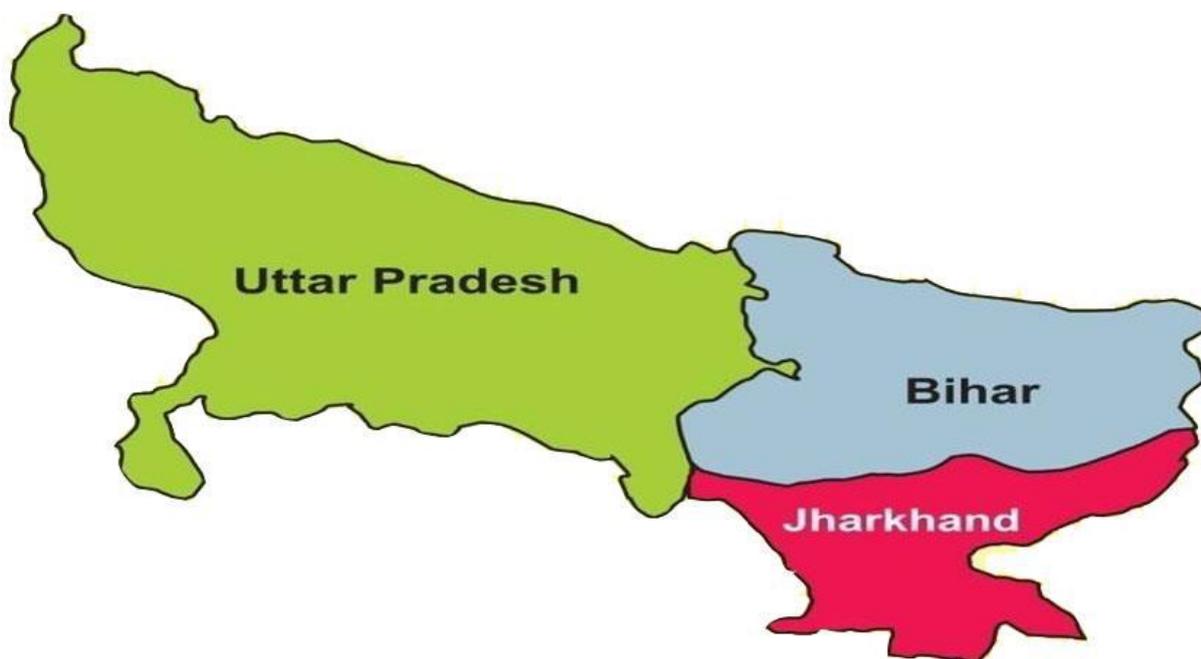


# ICAR REGIONAL COMMITTEE NO-IV (Bihar, Jharkhand & Uttar Pradesh)



## PROCEEDINGS OF THE XXIII MEETING

held at  
ICAR-Research Complex for Eastern Region, Patna (Bihar)

26-27 August, 2016



Indian Council of Agricultural Research  
New Delhi

## **PROCEEDINGS & RECOMMENDATIONS OF THE XXIII MEETING OF ICAR REGIONAL COMMITTEE No. IV**

The XXIII Meeting of ICAR Regional Committee No. IV was held during August 26-27, 2016 at ICAR Research Complex for Eastern Region, Patna, Bihar. The meeting was attended by officials from ICAR headquarters, New Delhi; Vice Chancellors (VCs) of State Agricultural Universities (SAUs) from the States of the Region *i.e.*, Bihar, Jharkhand and Uttar Pradesh; Directors of ICAR Institutes; Heads/Officers-in-Charge of Regional Stations of ICAR Institutes and senior officials from State Government Departments of the three states (Annexure).

### **INAUGURAL SESSION**

At the outset, Dr B P Bhat, Director, ICAR-RCER, Patna welcomed the Chief Guest, Dr. Trilochan Mohapatra, Secretary (DARE) and Director General (ICAR), Guest-of-honour Sh. Vijay Prakash, Agriculture Production Commissioner, Bihar and Sh. S.K. Singh, Additional Secretary (DARE) & Financial Advisor (ICAR); Dr. Jeet Singh Sandhu, Deputy Director General (Crop Science) and Nodal Officer, ICAR Regional Committee No. IV; Dr. Rajendra Kumar, DG, Uttar Pradesh Council of Agricultural Research (UPCAR), Lucknow; Sh. Sudhir Bhargava, Sh. R.P. Singh and Sh. Suresh Chandel, Hon'ble Members of Governing Body of ICAR; Deputy Director Generals (DDGs) of ICAR; VCs of SAUs; Assistant Director Generals (ADGs) of ICAR; Directors of ATARIs; Directors of different ICAR Institutes; Heads/Officer-in-Charge of Regional Stations of ICAR Institutes; Deans and Directors of Research and/or Extension of SAUs and senior officials from State Government Departments of the three states. Dr. Bhat also stated that this meeting is an opportunity to discuss the issues and problems being faced by farmers of the region and to frame an outline to work-out their possible solutions.

Dr. Trilochan Mohapatra, Secretary DARE & DG ICAR, Govt. of India and dignitaries of dais inaugurated the XXIII Meeting of ICAR Regional Committee-IV, being organized at ICAR-RCER, Patna. Dr. Mohapatra emphasized on state and centre coordination and stressed that there is a lot of potential in Bihar, Jharkhand, and Uttar Pradesh for agricultural development, which needs to be harnessed with concerted efforts of scientists and development departments. He also stressed that there is an urgent need to infuse the newer agricultural technologies for improving the productivity in these states. He exhorted the scientists and officials to pay maximum attention to the need of small farmers by improving the process of location-specific technological interventions and initiatives for timely transfer of technology. He stressed upon the need of close collaboration between KVKs and ATMA in agricultural transformation and explained KVK as an important system which is unique in sustaining food security. State Agricultural Universities have the important role in solving local agricultural problems. He also emphasized on the need to speed up the seed delivery system and stressed upon the need to encourage pulses and oilseeds production. He stated that Hon'ble Minister of Agriculture and Farmers Welfare is taking special interest in pulses and oilseeds production in Tal areas. He highlighted the role and need of farm mechanization to handle labour problem as well as to improve profit. He appreciated the use of implements in sugarcane cultivation. He also appreciated the technologies of disease forecasting and disease management of livestock, especially STR biosensor test against Brucellosis disease. He emphasised research on conservation of local breeds and the varieties of different crops, a total of 160 breeds of livestock have been registered so far. He further

said that Indian economy is growing at a faster rate and the GDP is projected to go up to 8 per cent with the good monsoon this year. Even though Indian agriculture has experienced two consecutive droughts in past two years, the production has not gone down and didn't make any negative effect on overall growth of Indian Economy. He also emphasized on effective planning to help in two-fold increase of farmers' income within 2022 in order to fulfil the vision of India.

Driven by hopes of a good monsoon, he highlighted the target food grain production of 2016-17. The target has been projected of producing a record 270 million tonnes of food grains in the crop year beginning June. The target for 2016-17 is 7% higher than the 252.23 million tonnes of production estimated for 2015-16. The target is even higher than India's record food grain output of 265 million tonnes in 2013-14. Last year, the target was set of 264 million tonnes (2015-16), which eventually fell short by 12 million tonnes. In 2013-14, owing to a good monsoon, India had surpassed its food grain production target of 259 million tonnes by over 5 million tonnes. While 2014 and 2015 were both deficit monsoon years, India is expected to witness above-normal rains in 2016. India's pulses production is targeted at 20.75 million tonnes in 2016-17, 21.6% higher than the estimated 17.06 million tonnes produced in 2015-16. Similarly, target production of wheat is 96.5 million tonnes for 2016-17, higher than the estimated 94 million tonnes crop size in 2015-16, and surpassing the highest-ever wheat crop of 95.85 million tonnes in 2013-14. Target for oilseeds production, for which India is heavily dependent on imports, is set at 35million tonnes, 35% higher than the 25.9 million tonnes estimated for 2015-16. Despite two consecutive drought years, production of food grains went up in 2015-16, and the target for 2016-17 is 'ambitious' as 'a good monsoon is expected. He also stated that these three States can make large contribution towards achieving target of food grain production.

He remarked that through this meeting, the ICAR comes to the doorstep of State Government Departments of the region, once in two years, to help them solve problems related to agriculture and allied sectors and therefore, presence of scientists is very important to discuss the problems and to find out solutions. He further added that ICAR should take active role in State Agriculture affairs and to develop strategies and action plan to combat drought and flood situations. He has emphasised on breeder seed production in which he stated that sometimes state governments are not lifting the breeder seed for which indent was given and ICAR institutes do not have any option but to sell such valuable seeds at normal rate. State Governments should take active role in multiplication of the breeder seed and to provide it to the farmers. He appreciated the scheme of 'Mukhyamantri Tibra Beej Vistar Yojana' in Bihar which has increased the seed replacement rate for major crops like paddy, wheat and maize substantially to the tune of 33% in recent years and expressed concern about poor seed replacement rate in Jharkhand. He stressed on fodder production by producing seeds in agricultural land/farms of state government. He also highlighted research on conservation agriculture for carbon sequestration, animal productivity and green house gas reduction, development of water logging tolerant variety for contingent planning and extreme weather events.

Post harvest losses of fruits and vegetables account for about 25% of total loss and hence, sustained efforts need to be made to standardize the packages to improve the shelf-life. Research on developing suitable and economical post-harvest technologies for processing, preservation and value addition of important horticultural products is the priority for the coming years.

While describing the importance of E-NAM (National Agriculture Market) portal he stated that KVKs should take the programme to link the farmers with E-NAM portal in order to harness the benefits of Agricultural Produce Market Committee (APMC) related information and services through this single window service.

He also spoke about the quality of Agricultural Education offered by the SAUs. He opined that the quality of the education being provided by SAUs will be judged on the basis of performance in ARS examination, JRF examination, performance at National Level Competitions, placement at the ICAR institutes like ICAR-IARI, ICAR-IVRI, ICAR-NDRI, etc. The DG also advised that the SAUs should play an active role in minimising duplication of research. Finally, he extended his thanks to all the three GB members for their advice and guidance.

Dr. J.S. Sandhu, DDG ( Crop Science) and Nodal Officer of this Regional Committee explained the constraints like fragmented land, water logging conditions, soil degradation and natural calamities (like floods, droughts) are hindering the growth of agricultural production in Bihar. Further, he underlined the non-availability of quality seeds, green fodder and poor marketing as constraints in agricultural production. He further remarked that Bihar and Jharkhand have vast potential in growing pulses and vegetables. Initiatives have already been taken to start second green revolution in eastern parts of India and there is scope to improve irrigation and achieve more crops per drop of water.

The Agricultural Production Commissioner, Govt of Bihar, Sh. Vijay Prakash spoke about the major problem in Bihar like silt deposition in Kosi and Ganga rivers, which is leading to severity of the floods in the state. He proposed various suggestions on commercial utilization of silt. He also remarked about the Mokama Tal management for agricultural production. He further said that research should be focused more on small animals like goat, sheep, rabbits, pig and rodents etc. for the improvement of livelihood of small farmers of Bihar and Jharkhand. He further stated about the importance of longterm research and 3-D printing technology.

The Additional Secretary & Financial Advisor (DARE/ICAR), Sh. S. K. Singh stressed upon the need of UPCAR like Council for Bihar and Jharkhand. He also remarked that agriculture is the backbone of all the three States, and therefore, State Governments should work together on education and research. Dr. Rajendra Kumar, DG, UPCAR, Lucknow also expressed his views on the agricultural development in the region and stressed upon the need of proper co-ordination between centre and state.

On this occasion, total six publications of ICAR-IVRI, Izatnagar; ATARI Kanpur; ICAR-IGFRI, Jhansi; ICAR-RCER, Patna and BAU Ranchi were also released by the chief guest and other dignitaries.

The inaugural session ended with vote of thanks given by Dr. R K Singh, Director *cum* Vice-Chancellor, ICAR-IVRI & Member Secretary, ICAR Regional Committee No. IV.

## TECHNICAL SESSION: DAY-01 (26.08.2016)

The session was chaired by Dr. Trilochan Mohapatra, Secretary (DARE) & Director General (ICAR). During the introduction of participants, Chairman expressed his concern about poor representation from the State Government Departments of Bihar, Jharkhand and Uttar Pradesh. Thereafter, the Chairman desired presentation of the Action Taken Report (ATR) on Action Points/Recommendations of XXII meeting of ICAR Regional Committee No.IV, held at ICAR-IISR, Lucknow during September 5-6, 2014. Dr. R K Singh, Director, ICAR-IVRI & Member Secretary, ICAR Regional Committee No. IV presented the ATR, which was accepted by the house after discussion on the following points.

- **Chairman** remarked that **ICAR-IGFRI** will take action to form the team and develop strategies on improvement of fodder production in all the three States within one month period. He further added that all the animal science institutes should start seed production of fodder crops.
- **Prof. K.M.L. Pathak**, Ex-DDG (Animal Science) and Vice Chancellor of DUVASU, Mathura suggested that all the three states should give indent for fodder seeds so that within 2-3 years fodder production requirement can meet up the requirement.
- **Dr. Rajendra Kumar**, DG, UPCAR (Uttar Pradesh Council of Agricultural Research) remarked about the prospect of cultivation of CO 4 variety of Bajra Napier Hybrid for fodder production. He further added that seed replacement rate and variety replacement rate are very poor in UP and Jharkhand and research organizations should be empowered to certify the seeds.
- **Chairman** remarked that Andhra Pradesh Seed Corporation is providing seeds to the neighbouring states. Whether institutes and SAUs should be supported for seed production just like KVKs.
- In reply to the Chairman's remark, **Dr. J S Sandhu, DDG (Crop Science)** stated that under Mega Seed Project, SAUs are already playing important role in seed production, however, Bihar and Jharkhand do not have State Seed Corporation and the State Seed Corporation of Uttar Pradesh is not functioning very well.
- Concern of audit objection for excess seed production at different ICAR institutes was raised in discussion as State Department is not lifting the seeds for which indent was given.
- **Chairman** advocated that action to be taken within one month period to develop strategies for skill development, entrepreneurship development for rejuvenation of old orchards.
- **Chairman** urged the ICAR institutes to take action to assess the duck breeds available in all the three States and to formulate action plan on improvement of duck breed.
- **Dr. Joykrushna Jena**, DDG (Fisheries) remarked about preparation of document of *Desi Mangur* and he further added that technology is needed for breeding and propagation of *Desi Mangur*.
- **Chairman** advocated that action to be taken by ADG (Education) to complete the analysis of website data on repetition of research and the findings will be displayed to the websites **within 6 months period**.
- **Sh. R P Singh**, GB member suggested that KVKs should be free from the University in order to exercise the power for implementing activities.

- Licensing problem for community radio station was raised in the discussion and **Chairman** suggested that **SAUs** should initiate proposal while describing the benefits of community radio station and submit the proposal to the State Governments, and thereafter, DARE will take up the matter. **Dr. A K Singh**, DDG (Agricultural Extension) stated that funds are required for maintaining the community radio station.

Thereafter, the Chairman suggested that the State Departments may first highlight their issues and problems and then a reply/suggestion/solution/action plan could be given to them by the R&D institutions, i.e. the ICAR and the SAUs. Functionaries of agricultural institutions including the Vice Chancellors, Directors of ICAR institutes, the members of ICAR Governing Body, Deans and Directors of SAUs, officials of development departments from the states of Bihar, Jharkhand and Uttar Pradesh actively participated in discussing issues and problems of the three States and also helped to work out the action points for solution.

## **Issues, Problems and Action Points**

### **Agriculture**

#### **Issues and Problems in Bihar:**

- Government of Bihar made significant investment on farm mechanization in terms of subsidies for popularizing combine harvester and zero tillage technology. This effort made large contribution of purchasing combine harvester and zero tillage machines by the farmers and service provider. However, lack of driving skill of the local driver and technical understanding about the machines forced the farmers and service provider to hire driver from Punjab State.
- There is need of Para-Agriculture and Para-Extension workers for which graduate and post-graduate students may be engaged.
- Emphasis may be given for technical skill development and expertise for seed production.
- Coordination among the research institutes may be structured for effective functioning.
- Discrete and effective landuse planning may be formulated keeping in view the faster rate of urbanization and infrastructure development.
- Emphasis may be given for strengthening micro-level extension services; and farmers and extension worker interface at the terminal stage of extension service.
- KVK's functioning may be reoriented with the objective of independent operational activities and operational interlinking.
- Extreme weather events like huge downpour followed by long dry spell needs contingent planning like development of short duration rice variety and low water requirement rice variety.
- Escalating price of hybrid seeds reduces profit margin of the farmers. Therefore, efforts may be made to develop high yielding varieties having equal yield potential like hybrid varieties of the respective crops.
- Escalating price of different fertilizers is also the cause of low return from agricultural production. Therefore, strategies need to be developed for judicious inorganic and organic fertilizer management in agricultural production.
- Emphasis may be given to develop farm mechanization for small and marginal farmers.

- Research may be focussed on ameliorating rapid rate of declining of ground water table during summer season.
- Efforts may be made to work out the control measure of yellow vein mosaic disease in mung bean.

### **Issues and Problems in Jharkhand:**

- Undulating topography, poor retention of water, aberrant behaviour of monsoon causing late onset and early withdrawal effects leads to the irrigation problems.
- Efforts may be made to renovate old ponds and to create new ponds (*Doha*) for accumulating/harvesting surface water.
- There may be scope of horizontal expansion by converting fallow land to crop coverage and for which short duration pigeon pea, other pulses and millets can be grown.
- Efforts may be made to improve the cropping intensity by converting rice-fallow system to rice-pulses or rice-oilseeds system and for which zero tillage technology may be used to harness the benefits of residual soil moisture after harvesting of rice.
- Soil acidity, limited availability of liming materials for ameliorating soil acidity and issues of heavy metal content in basic slag are the major constraints of agricultural production.
- There is a need to develop management strategies for ameliorating soil acidity.
- Lack of seed corporation and good seed storage facilities are the major causes of poor seed replacement rate. The Directorate of Agriculture alone is taking additional responsibility of different allied sectors.
- There is a need to develop horticultural model suitable for small and marginal farmers.
- There is vast scope of vegetable production; however, value chain and post-harvest processing are essentially required for maximising profitability.
- Roadmap for single window service may be formulated for providing information on different technologies, Kisan Credit Card, Fasal Bima, Soil Testing, etc.

### **Issues and Problems in Uttar Pradesh**

**DG, UPCAR** highlighted the issues and problems like mode of interlinking, number of SMS in KVK for fulfilling the requirement of technology dissemination and implementing agencies.

#### **Action points:**

- **ICAR-CIAE** will take action to submit the proposal on training programme for combine harvester and zero tillage machines with all details within one week period.
- **RAU** will take action to submit the proposal within one week of timeframe for the certificate course of mushroom production.
- **BAU Sabour** in association with **ICAR-IISS** will take action to submit training proposal on seed production within one week period.
- Three mechanisms that include International Cooperation, Regional Committee Meeting and mechanism operating in SAUs may be used to identify problems and issues and to develop strategies and actions to resolve them.

- **ADG soil and water management** will take action to provide information about organic fertilizer requirement and recommendation for agricultural production and research will be undertaken to develop recommendation for the crops for which recommendations are not available. In addition to that, additional information will also be provided on seed coating with biofertilizers in agricultural production.
- **ADG soil and water management** will also take an action to facilitate extensive research activity on Land Use Policy for the period of 5 years in order to develop Policy on Land Use.
- **KVKs of State Governments** will take action to work in association with **ATMA** for micro level extension services and farmers extension worker interface at district level for technology dissemination.
- **ICAR-RCER** will take action to provide information to the States about availability of yellow vein mosaic virus disease resistant varieties of mung bean within one week period and accordingly states will furnish indent for breeder seed for further seed multiplication and dissemination to farmers.
- **ICAR-IIPR** will take action to develop 120 days short duration variety of pigeon pea (Arhar) within 3 years and breeder seed will be provided to all the 3 States.
- **RAU** will take action to submit proposal for doubling farmers' income and **ICAR-NCAP/NIAP** will study feasibility of the proposals.
- **SAUs and State Governments** of all the three States will take action to make assessment of breeder seed requirement of pulses and oilseeds and accordingly indent will be given so that seed requirement is fulfilled within two years.
- It was informed by **RAU** that summer mung bean is performing well in seed hub, however, there is a need to sort out the administrative problem and for which action will be taken to communicate with the State Government of Bihar regarding this matter by **ICAR-RCER**
- **State Government and SAUs of all three States** will take action to make plan for identification of export zone and land-specific crop cultivation and for which ICAR can support with available technologies like value-chain and post-harvest processing, etc.

#### **Animal Husbandry:**

##### **Issues and problems in Bihar:**

- Repeat breeding and infertility
- Lack of breeding farm
- Conservation and promotion of prestigious cattle breed 'Bachor' of Bihar. Director of ICAR-RCER informed that complete characterization and registration has been done and it was found that bullock is more effective with draft capacity of 6-8 hours. This breed has milk producing capacity of 6-8 litres per day.

##### **Issues and problems of Jharkhand:**

- Livestock resources are very poor.
- Chhotanagpuri breed of sheep and buffalo has good potential and, therefore, NGOs and other agencies should be involved for validation in large areas.
- Fighter breed of poultry available in tribal areas is also very much promising.
- No programme on development of cattle and buffaloes is being carried out.

##### **Issues and problems in Uttar Pradesh:**

- Repeat breeding and Infertility problems

- Problem of disease diagnosis and for which State Government has not developed any action plan.
- Shortage of feed and fodder
- No estimation of feed and fodder requirement has been done and no action point has been developed by State Government and SAUs.
- In Bundelkhand region, sheep and goat breeding programme should be taken up.
- '*Annapratha*' in Bundelkhand region is emerging as a big problem.

#### **Action points:**

- **ICAR-IGFRI** will provide information to all the three States on the model of fodder production including seed, planting materials, package of practices, literature and technology within one week of timeframe. State Government of Bihar, Jharkhand and Uttar Pradesh will be informed to give indent of breeder seed of fodder crops.
- It was informed by **ICAR-IVRI** that poor nutrition is the cause of infertility. **ICAR-IVRI** will provide information about manufacturer, total requirement of area/region-specific mineral mixture and its cost to all the three States within one month period.
- **DDG Animal Science** will take action to characterising non-descriptive breeds within 2 years in all the three States.
- **State Government of All three States** will take up the action of synchronization of oestrous.
- **ICAR-CIRG** will take up the action of sheep and goat improvement in Bundelkhand region within 2 months period.
- **State Government of Bihar** will take action to address the problem of non-availability of breeding farm in the State.
- **State Government of Uttar Pradesh** should take initiative to develop some policy on reduction of '*Annapratha*'.

#### **Fisheries:**

##### **Issues and problems in Bihar:**

- Inbreed and seed certification
- Skill development
- Interest rate of bank loan for fisheries is 12% which is considered very high for the farmers.
- Bihar has vast area under wet land of 9.4 lac hectares, and therefore, there is a need to formulate wet land development model scheme for North Bihar.
- Cost of the feed is very high, and therefore, emphasis should be given to develop location specific low-cost feed technology.

##### **Issues and problems in Jharkhand:**

- Both cage culture and Rajiv Gandhi Aquaculture Scheme have made good progress, however, breeding of Mangur is turning to be a major problem in Jharkhand.

##### **Issues and problems in Uttar Pradesh:**

- Certification problems
- High interest rate of bank loan in comparison to agriculture
- High feed cost

- There is a need of breeding technology of *Desi Mangur* and other fishes.
- Technologies are not successfully implemented due to seed production problems.
- Prawn culture is not successful because of high seed cost and emphasis should be given to develop the technology which can reduce the seed cost.
- Problem of disease diagnosis

#### **Action Points:**

- **DDG (Fisheries)** remarked that the document has been prepared on seed certification and hatchery accreditation. This document has been given to the Fisheries Department of all the three states and action should be taken by State Government of the three States.
- Knowledge gap is the primary problem of inbreeding. Breeding protocol of 20 species is available and **DDG (Fisheries)** will take up the action on skill development and to inform Secretary of all the three States within 15 days period.
- Farm-level feed technology is available; however, there is limited scope for feed development on commercial scale. As per the Chairman's recommendation, the action point will be taken up by **DDG (Fisheries)** to study the small-scale feed plant in Jharkhand and to explore the possibility of implementation in Uttar Pradesh.
- Plan for fisheries development in big wet land has been worked out and **ICAR-CIFA** will take up the action for execution. **ICAR-CIFRI**, Barrackpore is organizing training on wet land fisheries development and, therefore, **ICAR-CIFRI** will develop the action plan for wet land fisheries development and that will be given to the State Department.
- **ICAR institutes of Fisheries (ICAR-CIFRI, ICAR-CIFA and ICAR-NBFGR)** in association with **State Department of Fisheries** will take up the action for supporting brood stock and also to provide handholding to all the three States.
- **ICAR** will take action to make communication with the Hon'ble Minister of Agriculture and Farmers Welfare with the request of reducing interest rate of bank loan for fisheries farmers.

#### **Horticulture:**

##### **Issues and problems in Bihar:**

- Promotion of high density orchard for mango is required.
- There is a need of local level processing of mango.
- GB member made the remark about declining trend of makhana cultivation which has gone down from 23,000 hectare land area to 12,000 hectare land area.
- Makhana is labour-intensive crop cultivation and, therefore, cost of cultivation is higher than other crops.
- Specific transportation of makhana is needed for its marketing.
- Director of ICAR-IIVR opined that trunk or stem borer of mango is a major problem for mango orchard rejuvenation. After cutting of old tree, the trunk borer hinders new growth of the trees.
- There is a need for orchard rejuvenation in order to improve productivity of old orchards.
- Director, ICAR-RCER stressed upon the fact that existing funds for rejuvenation of orchard is very low and there is a need to enhance the funds from existing Rs 300/- per tree to Rs 900/- per tree.

- DDG (Engineering) proposed that emphasis should be given for industry-oriented Horticultural crop cultivation.
- GB member made comment on evaluation of effective training programme in terms of follow up programme.
- The Chairman suggested on conversion of old orchard to commercially viable orchard through top-grafting.
- In case of potato and litchi, the State Departments do not lift the seeds/seed materials even after giving indent for the seeds of those crops.
- The Chairman, DG(ICAR) suggested to replace Grand Nine variety (G 9) in order to make banana cultivation more sustainable.
- DDG (Agricultural Extension) has informed the house about the machine that can retain keeping quality of litchi for 60 days. MOU has been developed between ICAR-NRC on Litchi and manufacturing agency for demonstration.

#### **Issues and problems in Jharkhand:**

- Year-round fruiting of orchard

#### **Issues and problems in Uttar Pradesh:**

- DG of UPCAR highlighted the issues and problems like promotion of underutilized fruit crops in Bundelkhand region and he urged to develop strategies for fruit production in dry land condition of the region.
- DDG (Agricultural Extension) suggested for considering pomegranate, sweet potato, bel for fruit production in Bundelkhand region.
- Director, ICAR-IIVR made comments that most of the farmers are getting recommendation from state department to purchase vegetable seed from private companies. Only 10-15% of the total vegetable area is under ICAR-IIVR released varieties. Moreover, State Government is giving subsidy on the seeds being purchased from private companies.
- In Uttar Pradesh okra hybrid does have high potential due to low *Cercospora* leaf spot and low temperature.
- GB member remarked that lack of awareness about the institute varieties among the farmers is the cause of low coverage of institute varieties.

#### **Action Points:**

- **ICAR-RCER Research Centre for Makhana, Darbhanga** will take up the action on development of value chain, testing of technology, nutritional profiling, linking with foreign market, exploring export potential and trade, arrangement of kishan gosthi and development of diving kit for makhana harvesting. Identification of players or collaborators and assignment of activities should be done within 3 months period.
- **ICAR-NRC on Litchi** will take up the action plan of preparing bulletin of 22 rejuvenated orchards in terms of generating complete data sets relating to the productivity of those orchards.
- **ICAR-NRC on Litchi** will take up the action of submitting proposal of one year planning for orchard rejuvenation within one month period.
- **ICAR-RCER** will take up the action on demonstrating established model of orchard rejuvenation to the farmers for adoption of technology.

- **ICAR-RCER** will take up the action of submitting proposal for increasing allotment of funds for rejuvenation of orchard from existing Rs 300/- per tree to Rs 900/- per tree.
- **ICAR-RCER** will take up the action of highlighting the success story of top-grafting in mango in the experimental plots.
- **ICAR-CISH** will take up the action on apple orchard rejuvenation.
- **ICAR-NRC on Litchi** will take up the action to make communication to the State Government with the fact of not lifting seeds/seed materials of Litchi and Potato by State Department after giving indent for the seeds and pending payment of this venture.
- **DDG (Agricultural Extension)** will take up the action of taking leadership for developing sustainable package-of-practices of water management (exploring the benefits of pusa hydrogel/cumijal), soil management, animal husbandry, horticulture and fodder production in Budelkhand Region.
- **DDG (Horticulture)** will take up the action to make plan to sort out cold storage problem.
- **ICAR-IIVR** will take up the action on comparative evaluation between institute released vegetable hybrid varieties and hybrid varieties popularised by private agencies. It is mandatory to include private hybrid varieties as check varieties in experimentation. **ICAR-IIVR** will explore best option on crop-wise recommendation.
- **Chairman** has urged the **ICAR institutes, SAUs and State Governments** to promote best vegetable crop varieties irrespective of their release from institutes and private agencies.
- **State Government of Jharkhand** will take up the action to respond on round-the-year fruit production.
- **DDG (Agricultural Extension)** will take up the action to inform **National Horticulture Mission** about the successful venture of high density planting.
- **ICAR-RCER** will take up the action on assessment of rate of growth, canopy management, water management, micro-environment changes, disease and pest dynamics, total production, fruit quality and economic analysis of high density planting.
- **ICAR institutes, SAUs and State Government** will take up the action to promote technology of high density planting of mango and guava adopted in Bihar and Uttar Pradesh to Jharkhand.
- **RAU** will take up the action on research on local varieties with the objective of producing adequate planting material of vegetable crops and banana.
- **RAU** will take up the action to create Hazipur as a centre for conserving diversity of banana.

#### **Action points on post-harvest and processing:**

- **DDG (Engineering)** will take up the action to establish each 5 Agro-Processing Centres in all the three States in production catchment area.
- **DDG (Engineering)** will take up the action to provide information, bulletin on low cost storage for potato and onion to all the three States. National Horticulture Mission and SAUs will be engaged for research and promotion of low cost storage facility of potato.

#### **TECHNICAL SESSION: DAY-02 (27.08.2016)**

The session was chaired by Dr. Trilochan Mohapatra, Secretary (DARE) & Director General (ICAR). The Chairman appreciated the delegates for their active participation in discussion

during previous technical session. He again welcomed the delegates and urged to initiate discussion on issues and problems in the concerned state.

#### **Issues and problems in Extension:**

- **Director, ICAR-IIVR** remarked that State Government of UP is not providing land free of cost for opening of KVK under ICAR-IIVR, however, no charge is taken from SAUs for the same.
- **GB member** Shri. Sudhir Bhargava stressed upon the need of evaluating performance of KVKs in all the three States.

#### **Action Points:**

- **ICAR-IIVR** will take up the action to pursue and resolve the matter of taking charges from the KVKs under ICAR institutes and other State government charges like Nagar Nigam taxes in line with the policy of state government not to take charges or taxes from the KVKs under SAUs.
- **DDG (Agricultural Extension)** will take up the action of expediting KVK ranking, time-to-time assessment, linking salary with ranking and improving performance.

#### **Issues and problems in Education:**

- **Chairman** remarked that inbreeding culture in the SAUs is the root cause of poor quality of faculty strength. He has suggested the following measures for improving the quality of education
  - Quality of teaching has to be improved.
  - Faculty has to be upgraded through trainings.
  - Attention should be given to the students.
  - Special attention should be given to the disqualified students to make them *at par* with qualified students.
- **Chairman** also made the comment that separation of disciplines from SAU does not provide healthy education as integrated approach will be the best way to provide quality education.
- **Joint Director (Research), ICAR-IVRI** highlighted the statistics of qualified students from these three States for admission in Ph.D. and M.V.Sc programme in ICAR-IVRI. In Ph.D, 1 student from Bihar, 1 student from Jharkhand and 7 students from Uttar Pradesh and in M.V.Sc 1 student from Bihar, no student from Jharkhand and 11 students from Uttar Pradesh, while 22 students from Tamilnadu have qualified for admission. He also remarked that performance of students from Uttar Pradesh is comparatively better than that of Bihar and Jharkhand
- **ADG (Education)** highlighted the ranking of SAU and ICAR institute in JRF and SRF examination in which ICAR-IVRI ranked first, BHU second and Kanpur third in SRF examination, whereas, in JRF examination BHU ranked first and Kanpur second.
- **Chairman** stressed upon the need to look upon the model act of Agricultural Universities in India developed by ICAR (revised 2009) as only two states have adopted the model act.
- **Chairman** stressed upon the need of quality education of the SAUs in Bihar and Jharkhand.

- **DDG (Fisheries)** remarked about poor student strength in fishery science in SAUs of Bihar and Jharkhand and this is mainly due to poor faculty strength and lack of job opportunity after completion of study.

#### **Action points:**

- **ADG (Education)** will take up the action to inform the State Governments to expedite the release of 25% contribution of total funds for education and to take necessary steps in minimising mushrooming of SAUs and Agricultural Colleges.
- **ADG (Education) and SAUs** will take up the action to restore integration of all the disciplines of agriculture in SAUs keeping in view of integrated farming system and system approaches in agricultural production.
- **ADG (Education) and SAUs** will take up the action to bring all the SAUs under single umbrella.
- **ADG (Education)** will take up the action to encourage SAUs to submit proposal under CAFT training.
- **ADG (Education)** will take up the action to expedite the process of University Accreditation, implementation of 5<sup>th</sup> Deans Committee Recommendations, implementation of ICAR guidelines about 25% seats in Ph.D. for ICAR SRF holder and to maintain flow of fund without reduction of fund for quality education.
- **ADG (Education)** will take up the action to get view points from the SAUs whether there is any need to change the Model Act.
- **ADG (Education)** will take up the action to inform the Vice-Chancellors of all the SAUs for timely implementation of Career Advancement Scheme for which API scoring system should be followed.
- **ADG (Education)** will take up the action to inform SAUs about different schemes like Experiential Learning Module, Niche Area of Excellence (NAE) programme so that SAUs can take advantage of these schemes.
- **ADG (Education)** will take up the action to evaluate the performance of faculties of SAUs and based on the performance report ICAR will suggest to close down the faculty, which is not performing well.

#### **General Issues and problems:**

- Dr Ashok Kumar, Director of Research, SVPUAT, Meerut raised the issue of non implementation of maternity leave, child care leave for women scientist, however, it is implemented for non-teaching women staff in Agricultural Universities of UP. He also raised the issue of non-implementation of family planning increment for teaching staff and this issue was discussed with State Government officials with the reference of GO in which it is mentioned that GO is applicable except ICAR/UGC scale holder.
- Different AICRP centres running in SAUs are not receiving the share/contribution from State Governments.
- Non-implementation of post-retirement benefits and limited faculty number to cater education in SAUs.

### **Action points:**

- **ICAR** will take action to examine the issues and communicate to the State Governments.

During the technical session **GB member Sh. Sudhir Bhargava** stated that there is a need to change the mind set for price fixing of different commodities. Cost of the hybrid seed should be related with the output coming from the seed and recommendation of agrochemical should be based on new generation molecules. He further added that best technology should be promoted and maximum return can be achieved through mechanization. He said that effective implementation is required to achieve 5% growth rate per annum. Another **GB member Sh. Suresh Chandel** expressed his concern about poor response of State Department of all the three States and stressed upon the need to inform Ministers of the States for poor participation of State Departments. He advocated better participation for raising more issues and problems. He urged the scientists to work on indigenous cold storage of potato developed by the farmers as the farmers sometimes do not earn profit from the conventional cold storage. **GB member Sh. R P Singh** appreciated the efforts put by the Chairman Dr. Trilochan Mohapatra, Secretary (DARE) & Director General (ICAR) for live discussion about seed, seed production, horticulture, animal science and fisheries and he further stated that all the subjects of discussion are very much related with farmers' requirement. He opined that area-specific crop cultivation is a major issue in which banana cultivation is gaining importance and it may be turning to be a good venture for the farmers. He further added that KVK is a close friend of farmers and strategies need to be formulated to recognise KVK staff whether SMS or Scientist/whether university staff or ICAR staff.

Finally **Chairman** made conclusion of the two technical sessions with the following comments.

- Time-frame of the action will be fixed and action taken report will be reviewed periodically. The copy of the action taken report will be submitted to the GB members.
- Action will be initiated in accordance with the discussion.
- Success story of the activities needs to be replicated into other areas after fine-tuning if it is required.
- There is a need to study the factors responsible for causing yield gap and research should be undertaken to generate technologies in minimising impact of those factors on yield gap.
- There is immediate need to push forward farm mechanization.
- Best technologies should be promoted by the KVK.

The meeting came to a close with vote of thanks given by **Dr Shiv Prasad Kimothi, ADG (Coordination)**.

### **Summaries of Action Points/Recommendations of the XXIII Meeting of ICAR Regional Committee for Regional No. IV**

#### **Agriculture:**

1. Formation of team and sharing information with all three State Governments about model of fodder production including seed, planting materials, package of practices, literature and

- technology within one week period and intimation to all three State Governments for giving indent of breeder seeds of fodder crops (**Action to be taken: ICAR-IGFRI**).
2. Submitting proposal on training programme for combined harvester and zero tillage machines with all details within one week period (**Action to be taken: ICAR-CIAE**).
  3. Submitting proposal for the certificate course of mushroom production within one week period (**Action to be taken: RAU**).
  4. Submission of training proposal on seed production (**Action to be taken: BAU Sabour in association with ICAR-IISS**).
  5. Recommendation on organic fertilizer requirement and seed coating with bio-fertilizers for agricultural production and conducting research to develop recommendation on organic fertilizer requirement for the crops which are not available (**Action to be taken: ADG soil and water management**).
  6. Conducting extensive research on Land Use Policy for the period of 5 years in order to develop Policy on Land Use (**Action to be taken: ADG soil and water management**).
  7. Implementation of Micro-level extension services and Farmers- Extension Worker- interface at district level for technology dissemination (**Action to be taken: DDG, Agril. Extension in association with ATMA**).
  8. Providing information to the States about availability of yellow vein mosaic virus disease resistant varieties of mung bean within one week period and getting indent from the State for breeder seed of resistant varieties (**Action to be taken: ICAR-RCER**).
  9. Development of 120 days short duration variety of pigeon pea within 3 years period and distribution of breeder seed to all the three States (**Action to be taken: ICAR-IIPR**).
  10. Submitting proposal for doubling farmers' income (**Action to be taken: RAU and ICAR-NCAP/NIAP**).
  11. Assessment of breeder seed requirement of pulses and oilseeds and submission of indent for breeder seeds (**Action to be taken: State Departments of Agriculture and SAUs of Bihar, Jharkhand and UP**).
  12. Submission of proposal to the State Government of Bihar for promoting summer mung bean (**Action to be taken: RAU and ICAR-RCER**).
  13. Identification of export zone and land specific crop cultivation (**Action to be taken: State Departments of Agriculture and SAUs of Bihar, Jharkhand and UP, all the ICAR institutes belong to three States/IISR, IIVR, RCER, IISS, CISH will support it with available technologies like value-chain, post-harvest processing etc.**).

### **Animal Husbandry**

1. Disseminating information about manufacturer, total requirement of area/region-specific mineral mixture and its cost to all the three States within one month period (**Action to be taken: ICAR-IVRI**).
2. Characterisation of non-descriptive breeds in all three States within 2 years period (**Action to be taken: DDG, Animal Science**).
3. Synchronization of oestrous (**Action to be taken: State Department of Animal Science of Bihar, Jharkhand and UP**)

4. Sheep and goat improvement plan for Bundelkhand region within 2 months period (**Action to be taken: ICAR-CIRG**).
5. Addressing the problem of non-availability of breeding farm in Bihar (**Action to be taken: State Department of Animal Husbandry of Bihar**).
6. Policy development on *Annapratha* (**Action to be taken: State Departments of Agriculture / Animal Husbandry of Uttar Pradesh**).
7. Assessment of duck breeds available in all the three States and formulation of action plan for improvement of duck breed (**Action to be taken: DDG, Animal Science, ICAR-CARI**).

#### **Fisheries**

1. Implementation of seed certification and hatchery accreditation (**Action to be taken: State Department of Fisheries of Bihar, Jharkhand and Uttar Pradesh**).
2. Intimation and sharing information to the Secretary of Bihar, Jharkhand and Uttar Pradesh about skill development on fish breeding within 15 days period (**Action to be taken: DDG Fisheries**).
3. To study the small-scale fish feed plant in Jharkhand and to explore the possibility of implementation in Uttar Pradesh (**Action to be taken: DDG Fisheries**).
4. Development of action plan for wetland fisheries development and sharing information with the State Department of Bihar, Jharkhand and Uttar Pradesh (**Action to be taken: ICAR-CIFA, ICAR-CIFRI**).
5. Supporting broodstock and providing handholds to the State Department of Fisheries of Bihar, Jharkhand and Uttar Pradesh (**Action to be taken: ICAR-CIFRI, ICAR-CIFA, ICAR-NBFGR and State Department of Fisheries of Bihar, Jharkhand and Uttar Pradesh**).
6. Reducing interest rate of bank loan for fisheries farmers (**Action to be taken: DDG Fisheries**).

#### **Horticulture:**

1. Development of value chain, testing of technology, nutritional profiling, linking with foreign market, exploring export potential and trade, arrangement of kishan gosthi and development of diving kit for makhana harvesting. Identification of collaborators and assignment of activities within 3 months period (**Action to be taken: ICAR-RCER Research Centre for Makhana, Darbhanga**).
2. Preparation of bulletin of 22 rejuvenated orchards and submission of proposal of one year planning for orchard rejuvenation within one month period (**Action to be taken: ICAR-NRC on Litchi**).
3. Action plan formulation for skill development and entrepreneurship development for rejuvenation of old orchard within one month (**Action to be taken: ICAR-NRC on Litchi**).
4. Demonstration on established orchard rejuvenation model to the farmers, submission of proposal for increasing allotment of funds for rejuvenation of orchard from existing Rs 300/- per tree to Rs 900/- per tree and highlighting success story of top-grafting in mango in the experimental plots (**Action to be taken: ICAR-RCER**).
5. Action plan for apple orchard rejuvenation (**Action to be taken: ICAR-CISH**).
6. Communication to the State Government regarding non-lifting of seeds/seed materials of Litchi and Potato by State Department of Agriculture after giving indent and pending payment of this venture (**Action to be taken: ICAR-NRC on Litchi**).
7. Taking leadership for developing sustainable package-of-practices of water management (exploring the benefits of pusa hydrogel/cumijal), soil management, animal husbandry,

horticulture and fodder production in Budel Khand Region (**Action to be taken: DDG, Agril. Extension**).

8. Development of action plan to sort out cold storage problem (**Action to be taken: DDG, Horticulture**).
9. Comparative evaluation between institute released vegetable hybrid varieties and hybrid varieties popularised by private agencies (**Action to be taken: ICAR-IIVR**).
10. Action plan for round-the-year fruit production (**Action to be taken: State Department of Horticulture, Jharkhand**).
11. Sharing information about successful venture of high-density planting with National Horticulture Mission (**Action to be taken: DDG, Agril. Extension**).
12. Assessment of rate of growth, canopy management, water management, micro-environment changes, disease and pest dynamics, total production, fruit quality and economic analysis of high density planting (**Action to be taken: ICAR-RCER**).
13. Promotion of technology of high density planting of mango and guava in Jharkhand (**Action to be taken: ICAR-RCER, ICAR-CISH, State Department of Horticulture and SAU of Jharkhand**).
14. Conducting research on local varieties for providing adequate planting material of vegetable crops and banana and creation of centre for conserving diversity of banana in Hazipur (**Action to be taken: RAU**).
15. Establishment of each 5 Agro-Processing centres to all the three States in production catchment area (**Action to be taken: DDG, Engineering**).
16. Sharing information, bulletin on low-cost storage for potato and onion with all the three States (**Action to be taken: DDG, Engineering, SAUs of all the three States, National Horticulture Mission**).

#### **Extension:**

1. Pursuing and resolving the matter of taking charges by the state government from two KVKs including charging Nagar Nigam taxes by the State Government of Uttar Pradesh. (**Action to be taken: ICAR-IIVR**).
2. Expediting KVK ranking, time-to-time assessment, linking salary with ranking and improving performance of KVK. (**Action to be taken: DDG, Agril. Extension**).
3. Submission of proposal to the State Governments for community radio station. (**Action to be taken: SAUs of all the three States, ICAR and DARE**).

#### **Education:**

1. Intimation to the State Governments to expedite the release of 25% contribution of total funds for education and to take necessary steps in minimising mushrooming of SAUs and Agricultural Colleges, restoring integration of all the disciplines of agriculture in SAU, bringing all the SAUs under single umbrella, encouraging SAUs to submit proposal under CAFT training, expediting the process of University accreditation, implementation of 5<sup>th</sup> Deans Committee Recommendations, implementation of ICAR guidelines about 25% seats in Ph.D for ICAR-SRF holder and maintaining flow of fund without reduction of fund for quality education (**Action to be taken: DDG, Education and SAUs of all the three States**).
2. Sharing information with SAUs about different schemes like Experiential Learning Module, Niche Area of Excellence (NAE) programme, evaluating performance of faculties of SAUs, intimating Vice Chancellor of SAUs for timely implementation of Career Advancement

Scheme and adoption of API scoring system (**Action to be taken: DDG, Education and SAUs of all the three States**).

3. Receiving view point from SAUs on the Model Act of Agricultural Universities in India developed by ICAR (revised 2009) (**Action to be taken: DDG, Education**).
4. Completion of analysis on repetition of research work and displaying findings on the websites within 6 months period (**Action to be taken: DDG, Education**).

**General Issues:**

1. Examining the issue of post-retirement benefits, limited faculty number, non implementation of maternity leave, child-care leave for women scientist and non implementation of family planning increment for teaching staff and communicate to the State Governments (**Action to be taken: ICAR Institutes**).

**Participants of XXIII Meeting of ICAR Regional Committee No. IV held at ICAR RCER, Patna during August 26-27, 2016**

**List of Participants**  
(Not as per the seniority)

Sl.No.	Name	Designation/Address
1.	Dr. Trilochan Mohapatra	Secretary, DARE and DG, ICAR, New Delhi
2.	Dr. S.K. Singh	AS&FA, DARE/ICAR, New Delhi
3.	Dr. J.S. Sandhu	DDG (CS), ICAR, New Delhi
4.	Dr. R.K. Singh	Director, IVRI, Izatnagar
5.	Dr. K.M.L. Pathak	Vice Chancellor, DUVASU, Mathura
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8.	Dr. J.K. Jena	DDG(Fisheries Science), ICAR, New Delhi
9.	Dr. A.K. Singh	Vice Chancellor, BAU, Sabour, Bhagalpur.
10.	Dr. H. Rahman	DDG (Animal Science), ICAR, New Delhi
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13.	Dr. Sudhir Kumar Bhargava	G.B. Member, ICAR
14.	Dr. Suresh Chandel	G.B. Member, ICAR
15.	Dr. Rajendra Kumar	Director General, UPCAR, Lucknow
16.	Dr. Arvind Kumar	Vice Chancellor, R.L.B.C.A.U., Jhansi
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34.	Dr. F.H. Rahman	Principal Scientist, ICAR-ATARI, Kolkata
35.	Dr. B. Prakash	Director, ICAR-CIRC, Meerut
36.	Dr. M.S. Chauhan	Director, ICAR-CIRG, Makhdoom
37.	Dr. Neeraj	Head, Deptt. Of A.H. & Dairying SHIATS, Allahabad
38.	Dr. Wilson Kispotha	Director, Directorate of Extension, SHIATS, Allahabad
39.	Dr. A.S. Panwar	Director, ICAR-IIFSR, Modipuram, Meerut.
40.	Dr. A.B. Rai	Head, Protection, ICAR-IIVR, Varnasi
41.	Dr. Vishal Nath	Director, ICAR-NRC on Litchi
42.	Dr. V.K. Mishra	Head, CSSRI, RRS, Lucknow
43.	P.K. Singh	PC –ICAR-Linseed, Kanpur
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65.	Dr. P.K. Singh	Chairman (PBG), BAU, Sabour, Bhagalpur
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92.	Dr. George John	Vice Chancellor, BAU, Ranchi

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