



INDIAN COUNCIL OF AGRICULTURAL RESEARCH,  
KRISHI BHAVAN, NEW DELHI

**MOST URGENT**

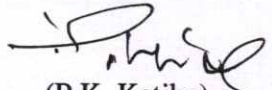
**DR. P.K. KATIHA**  
**ASSISTANT DIRECTOR GENERAL (PIM)-Acting**

F. No.5(8)/2018-PIM  
Dated: January 18, 2019

Subject: - Proceedings of meeting regarding Consortia Research Projects held on 28<sup>th</sup> December 2018

Kindly find enclosed herewith a copy of the proceedings of review meeting of CRPs held on 28<sup>th</sup> December 2018 under the chairmanship of Secy-DARE & DG-ICAR.

All the concerned officers are requested to kindly send the point-wise reply on the suggestions/recommendations, to the undersigned, and prepare a document on the "Technologies from CRPs" before 31<sup>st</sup> March 2019, including details of product/process/technology/ vaccines or diagnostics/ facilities developed and capacity building, etc. so that a Brainstorming session may be conducted after March 2019 on CRPs for strengthening/continuation/modification of existing CRPs and to explore feasibility of restarting CRPs like Borer and Nanotechnology as well as initiating some new CRPs such as Biosystematics, Biometeorology, Robotics, Artificial intelligence, Transgenics etc.,

  
(P.K. Katihia) 18/1/19

Encl: as above

**Distribution**

1. DDG(CS)
2. DDG(Hort)
3. DDG(NRM)
4. DDG(Engg)
5. DDG(AS)
6. DDG(Fy)
7. ADG(AH)
8. ADG(HS 1)
9. ADG(Seed)
10. ADG(Engg)
11. ADG(SWM)
12. Pr. Sci(AH)



## Proceedings of Review Meeting of Consortia Research Platforms (CRPs) held under the Chairmanship of Secretary(DARE) & Director General, ICAR on 28<sup>th</sup> December 2018 at 2:30 pm at Mahatma Jyotiba Phule Hall, Krishi Bhawan

A meeting of the CRPs was held on 28<sup>th</sup> December, 2018 under the Chairmanship of Secretary (DARE) & DG ICAR to review financial progress as well as action taken by the Subject Matter Divisions on the recommendations/ suggestions made during the previous review meeting held on 06<sup>th</sup> March 2018. The concerned Deputy Director Generals, Assistant Director Generals, Institute Director/ leaders of the CRPs and other Senior Officers of the ICAR participated in the meeting. The list of participants is appended.

After detailed discussions and deliberations, following general and platform specific recommendations have emerged:

### GENERAL RECOMMENDATIONS:

- 1) Leaders of CRPs should ensure 100% fund utilization. In case any CRP leader finding difficulty in utilization of funds, it should be returned immediately to the Council/SMD so that need based allotment can be made to other programs.
- 2) Each CRP must submit list of all publications brought out during last 2 years. Impact of each program may be worked out based on quality of publication. [Total Impact = Cumulative impact factor of all papers; Average impact = Total impact/ No. of publications].
- 3) Technologies developed and validated under the CRPs may be made available to different stakeholder of various ministries, departments and other agencies for their adoption/popularization. This will help in increasing the visibility of ICAR across the country.
- 4) A document to be brought out on the "Technologies from CRPs" before 31<sup>st</sup> March 2019, including details of product/process/technology/ vaccines or diagnostics/ facilities developed and capacity building, etc. Capacity Building may include sub-heads such as Training to faculty, farmers and students, degree awarded to students, entrepreneurship and employment generated, etc. The document should also include projections and guidelines for future research
- 5) A Brainstorming session shall be conducted after March 2019 on CRPs for strengthening/continuation/modification of existing CRPs and to explore feasibility of restarting CRPs like Borer and Nanotechnology as well as initiating some new CRPs such as Biosystematics, Biometeorology, Robotics, Artificial intelligence, Transgenics etc.,



**SPECIFIC RECOMMENDATIONS/ SUGGESTION:**

**CRPs of NATURAL RESOURCE MANAGEMENT DIVISION**

**1. CRP on Conservation Agriculture (CA):**

The Principal Investigator of the project explained the crops and system productivity. Conservation agriculture increased productivity in wheat by about 14 % under the Rice-Wheat System in experiments at CSSRI, Karnal.

**Suggestion/ Recommendations:**

- To work out the medium and long terms benefits in terms of total advantage / returns occurred under CA (savings in resources like water, energy, electricity and labour, and of sustainability indices like improvement in soil attributes and the Benefit-Cost ratio).
- In view of present spending and available funds, required fund needs for this consortia may be explored from the savings of NICRA.

**2. CRP on Water**

The Principal Investigator apprised that a total of 34 Rubber Dams have been established so far. The economic analysis has been done of the dams those have completed three years of operation.

**Suggestion/ Recommendations:**

- Cost benefit analysis of all 34 rubber dams to document their advantages and net returns.
- A complete picture/ package of maps, etc. to be prepared, for promotion and propagation of these 34 dams country wide.
- Study the increase in cropping intensity.
- Screen the germplasm for Water Use Efficiency (WUE), its component analysis (factor-wise) and comprehensive study stating the traits contributing towards WUE.
- Water efficient genotypes to be identified in Rice, Wheat and Sugarcane.
- Sensor-Based irrigation (SBI) in cotton may be targeted,
- Promotion of SBI in various cereal and horticultural crops in the country including rice, cotton, pigeon pea, etc.
- Validated technologies may be scaled up for SBI and "Technology Bulletin" be brought out for Sugarcane for dissemination in States, Industries etc.
- The SBI technology of Sugarcane be scaled up in "Banana institute" for uses.



- Economics and validation of waste water treatment system installed in Mathura, its impact in terms of water treatment efficiency (heavy metal output) / savings of water, etc. may be completed by next year.
- Since 425 units of waste water treatment have been installed in the country, a proposal may be submitted to Ministry of Urban Development for use of the technology in the entire country, the same may be followed up with the Hon'ble Minister for having visible impact of ICAR in the Country.

## **CRPs of AGRICULTURE ENGINEERING DIVISION**

### **3. CRP on Farm Machinery & Precision Farming**

The Principal Investigator apprised about the objectives of CRP and machines developed. A total of 14-15 machines have been developed, a few are new and a few are an improvement over the existing ones.

#### **Suggestion/ Recommendations:**

- The process gap identification may be initiated prior to machine development and assessing Industry demand. Availability and options of machines for specific farm/ Industry operation and future need may be considered.
- Higher emphasis should be on designing new and not existing machines and equipment having market demand.
- ICAR-Industry interface to discuss new technologies and identify gaps. Mr. Jhunjhunwala may be invited to participate in the meeting.
- Bring out a compendium on details of the machines developed, uses, cost, benefits and suppliers, etc. Document may be prepared on supply vs demand for various machines/ equipment developed.
- Identify 5-6 prime technologies/ machines for Industry uses.

### **4. CRP on Energy from Agriculture**

The Principal Investigator presented the progress of the program. Chairman advised that the unspent funds be surrendered and immediately re-channelized.

#### **Suggestion/ Recommendations of the Chairman:**

- Prepare a document for presentation to PMO on continuous production of Bio-oil/ Bio-CNG from crop residues, if the technology is viable and economical.
- Standardize process for production of CNG from bio methane for use in vehicles.
- Study the Bio-CNG production system developed at Pune, Dr Vijay system in Punjab and ICAR system. These studies may provide energy solutions to the Country.



### 5. CRP on Secondary Agriculture

Deputy Director General (Agri. Engineering) apprised the financial and technical progress of the program.

#### Suggestion/ Recommendations of the Chairman:

- Documents be brought on the achievements of this CRP on “**Processable varieties**” and “**Fruit Processing Technologies**”.
- Document on action plan for identifying different production clusters for establishing suitable agro-processing centres.
- Technology for “**Pomegranate**” processing and action plan for “**Millet**” needs to develop.

### 6. CRP on Natural Fibre

Progress of the program was discussed and while noting the existence of many fibers, the Chairman enquired about source of new fibers. Development of yak fibre blended textiles with other natural fibres has been initiated in 2018-19 and the establishment of the value chain on yak-jute fibre processing is in the offing.

#### Suggestion/ Recommendations:

- Bring out a document on existing fibres, their commercialization and the industry to which technology has been transferred.
- Compare the equipment developed indigenously with the ones developed by other countries.
- Development of complete value chain on yak, okra and banana fibres.
- Efforts should be made in sourcing of new fibres.

### CRP on Health Foods

This CRP is closed.

#### Suggestion/ Recommendations:

- Document to be brought out on **important outputs and specific recommendations**.
- **Important findings and outputs must be published in research journals.**



**CRP of ANIMAL SCIENCE DIVISION**

**7. CRP on Diagnostics & Vaccines**

Progress of the program was presented by Assistant Director General (AH). Two vaccines/ diagnostics shall be developed in coming two years. A quick financial review is required for efficient utilization of funds.

**Suggestion/ Recommendations:**

- Complete plan of action of Diagnostics may be developed for users, providing brief account of the diagnostics used, user guidelines, advantages, precautions and details of suppliers etc.
- Bring out success story about the application and impact of the various diagnostics, including the production of virus free planting material/ mother seed stocks.

**CRP of FISHERIES SCIENCE DIVISION**

**8. CRP on Genomics**

The financial and technical progress of the program was discussed. The Chairman asked about the use of information in breeding / variety protection etc. and enquired whether gene of Black pepper can be mapped, if funds are provided?

**Suggestion/ Recommendations:**

- Functional validation of the genomics information should be done, if identified through differential expression.
- Gene mapping of specific traits should be carried out.
- The diversity pattern in the population and descriptors for elite germplasm and varieties to be done.
- Bring out additional research publications.

**CRP of HORTICULTURE SCIENCE DIVISION**

**9. CRP on Phytochemicals and High Value Compounds**

Progress of the program was presented by Assistant Director General (Horticulture Science). Chairman enquired whether the compounds isolated under the program have been identified globally or not.

**Suggestion/ Recommendations:**

- To isolate high value phytochemicals from cinnamon and turmeric.



- Efficiency of these compounds should be tested individually and for mixtures together.
- Encapsulated natural colorants from sweet potato and yam may be developed.
- File Patent for anticancer herbal preparation from Garcinia and micro-encapsulated laxatives from senna.

### CRPs of CROP SCIENCE DIVISION

#### 10. CRP on Agro-biodiversity

Progress of the program was presented by Assistant Director General (Seed). Chairman asked about the progress of the trait discovery.

#### **Suggestion/ Recommendations:**

- Focus on the discovery of new species for food purposes.
- Cell lines of all 185 breeds of animal needs to be conserved.
- Develop document on the progress of trait discovery under different crops (rice, chickpea etc.) with location of work.
- A separate meeting shall be organized by ADG (Seed) to have discussion in detail.

#### **11. CRP on Molecular Breeding**

Progress of the program was presented by Assistant Director General (Seed). Five bio-fortified varieties have been developed and released for commercial cultivation. Several varieties developed using molecular markers are in advance stage of evaluation.

#### **Suggestion/ Recommendations:**

- Upgrade the existing document made under the program.
- Minimum 10 varieties should be released by 2019-20.
- All advanced lines and materials to be registered and stored in NBPGR.
- Varieties developed so far should be protected with PPVFRA.
- A strategy should be chalked out to popularize the new varieties developed
- Efforts should be made to put the released varieties under seed chain and commercialization under Public-Private Partnership to be look in.



### 12. CRP on Hybrid Technology

Progress of the program was presented by Assistant Director General (Seed). Under the program 03 hybrids of rice have been released, 08 each of rice, mustard, pigeonpea and 03 each of tomato and cauliflower are under AICRP evaluation.

#### **Suggestion/ Recommendations:**

- Document be prepared on the “Extent of Heterosis in crops”.
- Minimum of 10 hybrids be developed by 2019-20 field crops.
- 10 hybrids on vegetables also be developed by 2019-20.
- License all the lines/ varieties and protect them under PPVFRA.

### 13. CRP on Bio-fortification

Progress of the program was presented by Assistant Director General (Seed) and that 10 varieties have been released so far.

#### **Suggestion/ Recommendations:**

- Document on Bio-fortification to be updated by including new bio-fortified varieties released.
- Target to release 5 more bio-fortified varieties to make a total to 15 varieties to be released and licensed by 2019-20.
- More emphasis should be on development of multiple trait varieties such as High Zn- High Fe and High Protein, etc.
- Bio-availability and storability studies need to be carried out by 2019-20.
- Impact of Bio-fortified crops on animal and poultry health be studied by 2019-20.
- Efforts should be made to put the released varieties under seed chain and also for commercialization under Public-Private Partnership.

The meeting ended with a vote of Thanks to The Chair.





## DARE/ICAR

Proceedings of Review Meeting of CRPs held on Dec 28, 2018 at ICAR, Krishi Bhawan, New Delhi

**Participants of the Review Meeting of Consortia Research Platforms (CRPs) held under the Chairmanship of Secretary(DARE) & Director General, ICAR on 28<sup>th</sup> December 2018 at 2:30 pm at Mahatma Jyotiba Phule Hall, Krishi Bhawan**

S.No.	Name & Designation of the Officer
1	Dr. Trilochan Mohapatra, Secretary (DARE) & DG, ICAR
2	Dr. K. Alagusundram DDG, Agri. Engg.
3	Dr. Ashok Kumar, ADG (AH)
4	Dr. D.K.Yadav, ADG (Seed)
5	Dr. T. Janakiram, ADG (HS)
6	Dr. S.K. Chaudhari, ADG (SWM)
7	Dr. Kanchan K. Singh ADG (Engg)
8	Dr. R. K. Singh, ADG (CC)
9	Dr. P. Pravin, ADG (M.Fy.)
10	Dr. P.K. Katiha, ADG (PIM)
11	Dr. A. K. Vasisht, Senior Consultant (PIM)
12	Dr. M.K. Tripathi, Pr. Sci., (PIM), ICAR, HQ
13	Dr. Jyoti Misri, Pri. Sci. (AH), ICAR, HQ
14	Dr. P.L. Singh, Pr. Sci (FE), ICAR, HQ
15	Dr. P.S. Tiwari , Head, AMD, ICAR-CIAE, Bhopal
16	Dr. S.K. Jena, Pr. Sci. ICAR-IIWM-Bhubaneswar
17	Dr. Anil Kumar Dubey, Pr. Sci. CIAE, Bhopal
18	Dr. A.K. Biswas, CRP on CA, ICAR-IIS, Bhopal
19	Dr. K.M. Hati, CRP on CA, ICAR-IIS, Bhopal