

Salient Recommendations from the Conferences/Seminars/Symposia Sponsored by ICAR during the Triennium 2016-19

A COMPENDIUM



Indian Council of Agricultural Research
Krishi Bhawan, New Delhi 110001

**Salient Recommendations from the
Conferences/Seminars/Symposia
Sponsored by ICAR during the
Triennium 2016-19**

A Compendium



Indian Council of Agricultural Research
Krishi Bhawan, New Delhi 110001

Printed: October 2020

Citation:

Compendium Salient Recommendations from Conferences/Seminars/Symposia Sponsored by ICAR

Compiled & Edited by:

Dr. S P Kimothi, Assistant Director General (ADG), Coordination, ICAR, New Delhi.

Dr. C S Prasad, former Vice Chancellor, MAFSU and Director, ICAR-NIANP,

Dr. Deva Kumar, former Assistant Director General (ADG), Education, and

Dr. B.B. Singh, former Assistant Director General (ADG), Crop sciences

Dr. Sanjeev Panwar, Principal Scientist, Technical Coordination, New Delhi

Design & Production:

Punit Bhasin and Kul Bhushan Gupta, DKMA

ISBN: 978-81-7164-213-7

All Rights Reserved

@2020, Indian Council of Agricultural Research (ICAR), New Delhi



त्रिलोचन महापात्र, पीएच.डी.

सचिव एवं महानिदेशक

TRILOCHAN MOHAPATRA, Ph.D.
SECRETARY & DIRECTOR GENERAL



FOREWORD

Scientific societies and academic institutions functioning in the country organize conferences, symposia and seminars periodically. These activities are undertaken to deliberate upon and promote the Research and Development activities covering all spheres of agricultural research, education and extension by providing a platform to bring together various stakeholders to brainstorm on various important topics. The Indian Council of Agricultural Research provides limited financial assistance to these societies and academic institutions to organize national and international events based on the theme, content and relevance to the national priorities so as to enhance the quality of research. Useful recommendations emanating from these event provide the scientific basis and directions for the identification of the important areas of priority in research & development policy planning, education and extension for the benefit of scientists, academicians, policy planners, farmers, entrepreneurs and other stake holders.

In order to collate and prioritize the recommendations deriving out of these conferences the ICAR constituted a committee comprising of Dr. C S Prasad former Director, ICAR-NIANP, Dr. Deva Kumar former ADG, Education, Dr. B B Singh, former ADG, ICAR and Dr S P Kimothi ADG, Coordination ICAR, to bring out this publication intended to serve as a ready reckoner for use of researchers, teachers and policy planners.

I am happy that the compendium has captured key priority areas under various facets of agriculture which would help the NARES to use this information in planning the future research and facilitate technology backstopping to the end users effectively and efficiently.

I complement the efforts of the above core committee while acknowledging the suggestions given by the members of the standing committee and technical coordination unit for contribution in bringing out this useful publication.

(Trilochan Mohapatra)

Secretary (DARE) & DG, ICAR

भारत सरकार
कृषि अनुसंधान और शिक्षा विभाग एवं
भारतीय कृषि अनुसंधान परिषद
कृषि एवं किसान कल्याण मंत्रालय, कृषि भवन, नई दिल्ली 110 001

GOVERNMENT OF INDIA
DEPARTMENT OF AGRICULTURAL RESEARCH & EDUCATION
AND

INDIAN COUNCIL OF AGRICULTURAL RESEARCH
MINISTRY OF AGRICULTURE AND FARMERS WELFARE
KRISHI BHAVAN, NEW DELHI 110 001

Tel.: 23382629; 23386711 Fax: 91-11-23384773

E-mail: dg.icar@nic.in

Dr. Shiv Prasad Kimothi
Assistant Director General (Coordinators)



TELEPHONE OFF : 23388991 EXTN/6660
FAX : 011-23387290
WEBSITE : www.icar.org.in



भारतीय कृषि अनुसंधान परिषद
कृषि भवन, डॉ. राजेन्द्र प्रसाद मार्ग, नई दिल्ली-110 001
INDIAN COUNCIL OF AGRICULTURAL RESEARCH
Krishi Bhawan, Dr. Rajendra Prasad Road, New Delhi-110 001

From the Desk of Assistant Director General (Coordination)...

The Scientific Societies and academic institutions in India are playing important role in sustaining and enhancing the interest in research and thus contributing towards development of science and technology development in the country. The Indian Council of Agricultural Research, New Delhi has been operating a scheme for grant of financial assistance to scientific societies and academic institutions engaged in the field of agriculture and allied disciplines for meeting part of expenditure on publication of their journals and for holding international/ national seminars/ symposia out of Funds of Scheme Societies/ Award/ Regional Committee Subhead Support to Scientific Societies.

The society/academic institution supported by the Council is required to submit a feedback report in the prescribed proforma along with the proceedings of the seminar/ symposium/conference within two months of organizing the event. Societies/ bodies are required to send the recommendations of the seminar/symposium/conference etc. to the nodal implementing agencies/departments/organizations/institutions for their effective implementation under intimation to the ICAR. Comments of concerned DDG are obtained on the feedback report and proceedings. The Subject Matter Divisions at ICAR also monitor the implementation of the key recommendations emanating from these events for their logical conclusion.

This compendium includes key recommendations emanating from the national/ international seminars and conferences organized during the last 3 years (2017-18-2019-20). The recommendations in the compendium are categorized under different heads. I sincerely hope the document will serve the purpose well and generate interest among researchers and policy planners alike.

The guidance and encouragement provided by Secretary, DARE & DG, ICAR and all the members of the ICAR standing committee are gratefully acknowledged. The painstaking efforts taken by the committee members; Dr. C S Prasad, Dr. Deva Kumar and Dr. B B Singh constituted by DG, ICAR for the purpose and the officers & staff of Technical Coordination unit are duly acknowledged.

(S P Kimothi)

Assistant Director General-Coordination

Contents

Sl. No	SMDs/ Divisions	Nos.	Page No
	Executive Summary		1
1.	Crop Sciences	CS1-CS26	13
2.	Horticultural Science	HS1-HS8	29
3.	Natural Resource Management	NRM1-NRM27	35
4.	Animal Science	AS1-AS25	51
5.	Fisheries Science	FS1-FS8	67
6.	Agricultural Extension	AEx1-AEx19	73
7.	Economics Statistics & Marketing	ESM1-ESM11	83
8.	Agricultural Engineering	AEg1-AEg11	89
9.	Agricultural Education	AEd1-AEd2	95

EXECUTIVE SUMMARY

Agriculture is the backbone of the Indian economy and livelihood for a large section of rural masses. Its role in the industrial development is also no less important. The agricultural sector supplies raw materials to the agro-based industries like sugar, jute, cotton, ground-nut and oil seeds. It also directly and indirectly provides an enabling market environment for the industrial products. It is time and again tested that a rapid development of the economy depends on a smooth and sustained growth in the agricultural sector.

The Indian agriculture is threatened by various adverse consequences and challenges imposed by climate variability. In future, droughts, floods cold snaps, untimely rains, and heat spells are likely to be more frequent and severe. Scientific efforts, in the face of expected climate change and burgeoning population, must continue to be in forefront in overcoming emerging plethora of challenges in the field of agriculture and allied sector.

Indian Council of Agricultural Research, New Delhi, an apex body for conducting research, education and extension in the field of agriculture grants financial assistance to different registered scientific societies and academic institutions for organizing national/international seminars/symposium/conferences in India to promote all round agricultural development in the country. It provides interdisciplinary platforms to researchers, academicians, research managers, policy planners, farmers, entrepreneurs, industry and extension personnel, youth and women and such other stakeholders to exchange views and opinions, discuss and deliberate on relevant emerging and ongoing researchable and policy issues, and opportunities for scientific and technological innovations that will lead to acceleration of academic and research outputs in the areas of interest.

This compendium captures salient recommendations of the 137 events (CS26, HS8, NRM 27, AS 25, FS 8, AEx 19, ESM 11, AEg 11 and AEd 2 respectively) organized during the triennium from 2016-17, 2017-18 and 2019-20 under the ambit of eight subject matter Divisions of the Council, which, it is hoped, will help in redefining future programmes and strategize future meetings based on the recommendations.

Crop Science

The notable recommendations emanating out of twenty six conferences including the first National Plant Genetics Congress are captured below:

Pre-Breeding: Although India has large *in situ* and *ex situ* crop biodiversity, diversity in the germplasm being used by the breeders is limited. Hence, mobilizing variability from unabated germplasm (including land races and wild species) needs to be focused. It is, therefore, recommended that a network project on pre-breeding be established in important crop plants.

Germplasm Management: India being a center of origin/diversity for several crop plants, has gene bank with second largest number of germplasm collections. To efficiently use them, it

is recommended that the germplasm acquisition, both indigenous and exotic, be considered a continuous process and emphasis be laid on collection of wild species germplasm and gap analysis for collection, conservation, characterization and cataloguing.

Public Sector Plant Breeding is facing serious challenges especially in cotton, maize, vegetable and floricultural crops. Accelerated and coordinated efforts should be made in the area of translational genomic research in combination with agronomy for delivering faster genetic gains on farmers' fields. A comprehensive review of the GM technologies and necessary approvals within rules should be facilitated. Accelerated and coordinated efforts should be made in the area of translational genomic research in combination with agronomy for delivering faster genetic gains on farmers' fields. Conventional phenotyping must be supplemented by GPS, proximal sensing and remote sensing to improve efficiency in crop. It is, therefore, recommended that a one-day brain storming workshop be organized to discuss this issue. A joint meeting of the office bearers of all the societies associated with plant breeding and genetics may be convened to chalk out the strategies to meet the challenges faced by public sectors in crop improvement. The recommendations which emerged for strengthening of biotechnology research are:

- i) Greater emphasis be laid on identification and mapping of OTL for abiotic stresses and for productivity traits, and assembling of QTL with diverse mechanisms through MAS in important crops.
- ii) Strengthening of research on the development of transgenic and to establish a single central facility for undertaking bio-safety and IPR issues.
- iii) Strengthening of research in functional genomics and bioinformatics with a major focus on annotating gene functions and utilization of RNA technology for nutritional enhancement.

Seed Science & Technology: The establishment of Community Seed Banks for conservation of local genetic material and interlinking the Banks with seed business (especially in the north east) should be a periodical exercise. Novel local seed systems and alternative seed delivery models should be strengthened. A system of bringing the popular local / traditional / farmer varieties in the formal seed chain needs to be considered. In view of the shifts in the weather patterns, old varieties need to be evaluated under different changing weather conditions now, instead of discarding. Modern methods of seed quality assessment need to be adopted for higher precision and uniformity, using advanced technologies and appropriate instruments. Reporting of 'seed vigor statuses should be made compulsory in case of revalidated seed lots for ensuring satisfactory field performance of a seed lot.

Integrated Pest Management (IPM): Development of compounds affecting different targets like ryanodine receptor modulators, GABA gated chloride channels, uncoupling oxidative phosphorylation inhibition of ATP syntheses, intervening mitochondrial metabolic modulations etc. offer scope for judicious rotation of chemistries depriving target pest to develop resistance to pesticides. Awareness cum training program on Rugose Spiraling Whitefly (RSW) may be provided to the Customs officers working at International Airports/Sea Ports/ Land Frontiers.

Effort should be made to adopt only recommended varieties and avoid monoculture to prevent emergence of new pathogens/new races of the pathogens and disease epidemics. Climate change impact on plant health should be given more emphasis. In this regard two diseases specially mentioned are Cercospora disease and Spot blotch in wheat. Certain disease like smut of wheat and powdery mildew diseases earlier considered to be of minor importance has become major ones, needs special attention. Domestic and International quarantine regulatory measures should be strengthened. Development of rapid and easily accessible diagnostic kits for major pathogens and time series studies on pathogen population dynamics in relation to climate change should be conducted. Collaborative research programs on RNA mediated insect pest management with the international laboratories must be taken up. Surveys and collection need to be strengthened to find out efficient predators/parasitoids for biological control of some sucking insects pests. Quantitative data on the occurrence of invasive pests need to be developed involving all stakeholders.

Microbiological Research: Crop specific modules for organic farming to be developed incorporating the beneficial PGPR component and should be taken up on entire village basis. Engineering microbes for sustainable crop productivity and utilization to be systematically demonstrated involving the line departments.

2. Horticultural Science

The most significant recommendations emanated from the eight conferences organized during this triennium are listed below:

Accelerated Horti-Science Research: Systems to develop robots for production of grafts in vegetables especially in tomato, chilly and gourds should be explored. Research on Bio-reactor method for Hi Volume planting material need to be initiated on different horticultural crops. Establishing dedicated seed gardens for mass multiplication of high oil yielding genotypes of oil palm coconut seed gardens. Production and distribution for diseases-free quality planting material should be promoted through accredited nurseries. Need for promotion of flower based by product industries and strengthening of R&D in flower crops. Transcriptome analysis in Alphonso mango should be done to understand its unique characteristics. Improvement in traditional medicine needs authentication of raw material and its quality for better therapeutic efficacy. In this respect SCAR markers and metabolic engineering could be used as tools. Sustainable use of native plants in landscaping should be promoted.

Export Promotion: Special efforts should be taken to popularize technologies developed by institutions like ICAR-NRC Banana, CFTRI and various Agricultural Universities in value addition. Initiatives should be taken to enhance export of banana. Necessary infrastructure like storage facilities, refrigeration, packaging units should be established. Harmonize international Phytosanitary standards and regulations for fresh fruits & vegetables.

Models for Ponics Horticulture (hydroponics, aeroponics, aquaponics, etc.) systems especially for small holders needs to be devised with technology simplification must be promoted with adequate incentives. Rapid multiplication of the seed potato tubers through tissue culture in conjunction with Aeroponics systems.

Overarching Ideas: Horticultural scientists around the world need to work together to make progress in the areas of pollinators research, rootstock breeding, lines, vertical farming, robotics and mechanization of farming. Prospects of conservation of future fruits through custodianship *in situ* areas must be explored. *In situ* Conservation of identified commodities supported through communities and volunteer farmers in forest eco system to be explored. Use of geospatial technologies for efficient conservation of PGR needs to be done. E-pest surveillance and monitoring should be standardized with latest GPS based, real time and robotic tools for important horticultural crops. Wild relatives of horticultural crops need to be explored against biotic & Abiotic stresses and desired nutritional traits to develop/improve high yielding commercial varieties.

3. Natural Resources Management

Twenty seven meetings were organized covering climate change related aspects of rain-fed agriculture, advances in agro-meteorology doubling farmers' income through agronomic interventions and integrated farming system, soil and water conservation technologies and boosting production potential of coastal agriculture.

The most significant recommendations pertaining to each SMD are summarized below:

Agro-meteorological Research: ICAR should encourage the SAUs to established separate Department of Agricultural Meteorology in each SAU and start PG programs. ICAR may Institute Advance Training Centers in Agricultural Meteorology. Setting up a center within the administrative structure of ICAR will certainly boost the climate change research activities in agriculture in India. Creation of E-Agromet Knowledge Bank using advanced ICT tools at State level needs to be encouraged following the initiatives of ICAR for Climate Resilient Agriculture. Agro-meteorology being a comparative young but essential discipline, exclusive opportunities is created for human resources development and advanced level training at ASRB/ICAR/SAUs.

Climate-resilient Agriculture: Demonstration and popularization of climate-resilient low-cost technologies that help securing better improved crop varieties/hybrids resilient against climate shocks, , agronomic packages adjusting crop calendars, sowing and harvesting time as well as ensuring appropriately designed insurance products, timely availability of certified seeds and planting materials of high yielding varieties and hybrids having multiple resistance to biotic and abiotic stresses. Establishment of block level weather based agro-met advisory services, Department of Agro meteorology in every Agricultural Universities to produce trained Agro meteorologists and Pests and Diseases Monitoring System using weather model, information technology and geospatial technology at national / region levels. Documentation, identification and standardization of climate resilient (such as efficient in CO₂ assimilation, efficient water utilizing, high temperature tolerant, shade tolerant and multi – stress tolerant) agroforestry germplasm

is required. To monitor changes in pest and disease profiles and predict new pest and disease outbreaks, an early warning system should be put in place. Prepare computer simulation models of different weather probabilities, and develop and promote farming system approaches which can help to minimize the adverse impact of unfavorable weather, while maximizing the benefits of a good monsoon. Vulnerability assessment for different agro-ecologies/production system at micro level region is required to identify specific adaptation strategies to cope up with the climate change and associated environmental shocks and disasters. Critical analysis to understand basic mechanism of abiotic stresses in rice, pulses and oilseeds crops and to develop strategies to combat such stresses in changing climate needs attention.

Water Use Potential and Efficiency: Development of a spatial database on water resources availability, crop yield potential and yield gap in order to target location specific management decisions for improving water productivity. Micro-irrigation techniques coupled with mulching should be given priority for horticultural crop production in the coastal region. Hydro-salinity modelling in areas, where crop and brackish water aquaculture on large scale should be initiated to study impact on cultivated lands. This will enable to evaluate the synergies and conflicts of crop and brackish water aquaculture to properly manage the costal zones.

Agroforestry: Accreditation and gradation of germplasm centres/nurseries of important agroforestry species in different agro-climatic zones are required. Biodiversity conservation needs to be integrated with possible impacts of changing climate to ensure long term sustainability of reclamation and, management of SAS and PQW in inland and coastal regions.

Reclamation and Soil Conservation: Synergy among nano-bio and phyto-remediation and sensor based precision technologies and plant growth promoting microbes and their consortia should get priority for reclamation and management of SAS. Yield and water productivity can be enhanced by adopting better soil moisture conservation practices and better management, as well as by increasing provision of other factor inputs (NPK fertilizer, weed and pest control).

Other Ideas: Organic farming should be practiced in mass scale to improve soil fertility for crop productivity on sustainable basis. A referral laboratory on organic farming should be established in the country at state level. A “Himalayan Council” on the steps of Arctic Council needs to be constituted with an active involvement of all stakeholders. Capacity building and outreach in the field of glaciology and geopolitics of Polar Regions should be encouraged

4. Animal Sciences

In the area of Animal Sciences, 25 proposals (7 during 2016-17; 9 during 2017-18 and 9 during 2018-19) were approved for sanction of financial grant by council for holding conferences/seminars / symposia. The major recommendations coming out of these seminars were

Zoonotic Diseases

Timely detection and safe- guard measures for zoonotic diseases jointly with human medical practitioners is essential to address this critical problem. Proper screening procedures for the

detection of zoonotic diseases need to be practiced, particularly during festivals. Children should be made aware of zoonotic diseases at school level. Diagnostic labs should be set up in more number of places for early detection and control. There is a need for improved surveillance and control of livestock diseases especially trans-boundary and zoonotic diseases. The link between human, domestic animal and wildlife health and the threat of disease transmission should be documented.

Biotechnological Tools in Vaccine Production and Disease Control

Research on stem cells and nano technology in vaccine production and drug delivery should be given priority. Clinical trials need to be strengthened in translation of research findings in the field of stem cells and biomaterials as it provides a promising strategy for engineering tissues and cellular delivery. Biomarkers need to be identified that will provide opportunity for the innovative drug discovery and diagnostics. Research in the area of nutrient gene interaction with multi-institutional networking involving nutritionists, geneticist and biotechnologist needs to be taken up as an outreach program. Research focus should be to decipher host-pathogen interaction by elucidating the basic biology of pathogens as well as host with transcriptome analysis, miRNA research etc. to aim to control the disease by identification of newer targets & vaccine strategies.

AMR and Alternatives to Antibiotics

A mission mode project may be taken-up for integration of Pharmacokinetic- phramcodynamic biomarkers of anti-microbial in the food producing animals to minimize level of drug residue and emergence of drug resistance. Role of nutraceuticals in specific disease condition and its impact has to be studied involving multi-disciplinary team. Use of feed additives like probiobitcs and prebiotics as alternative to antibiotics has to be given top priority.

Pet Animal Care

Neonatal care of puppies, andrology and artificial insemination requires more emphasis in undergraduate syllabus and periodical awareness programs should be held for the benefit of practitioners and pet owners. Nutritional needs of pet animals (dogs and cats) should be periodically updated and brought out in the form of publication. Clinical nutrition is very important in management of diseases of pets and interaction between Clinical Departments and Animal Nutrition should be encouraged in all veterinary colleges. Non chemical acaricidals like herbal remedies to manage canine demodecosis should be explored to control chemical toxicity and environmental residual effect.

Disease Surveillance and Monitoring

National Network Programme on disease monitoring and epidemiology should be further strengthened and include study on production losses, national prevalence and molecular epidemiology of diseases in domestic livestock. There is an urgent need to explore the possibility of harmonization and commercialization of disease diagnostic techniques developed by various laboratories in the country.

Enhancing Reproductive Efficiency

For faster multiplication of superior germplasm, there is an urgent need to implement Multiple Ovulation and Embryo transfer technology and *in vitro* Embryo Production using sexed semen. Continuous financial support and skill development is necessary for successful implementation of these technologies to yield desired results. Efforts to upscale the technologies are essential so as to be cost effective to the livestock farmers.

Other Ideas

Geographical Tagging of the unique livestock products of indigenous livestock like Kadaknath for meat; A1/A2 milk, desi ghee, Garole and Kendrapada sheep for FecB gene, carpet wool of Chokla sheep, Hallikar and Nagouri cattle for draft purpose etc is essential. Need to have detailed study on the therapeutic value of camel milk, sheep milk and goat milk. Approval from FSSAI should be obtained for sale of different animal products for human consumption (certification for A2 milk, fortified milk, products from disease free animals etc).x) environmental pollutants in the animal food chain. There is a need for establishment of strong networking and collaboration among commonwealth countries in animal health and production.

5. Fishery sciences

In the area of fishery science, 8 proposals (6 during 2016-17; 1 during 2017-18 and 1 during 2018-19) were approved for sanction of financial grant by the Council for holding conferences/seminars / symposia. The major recommendations brought out from these seminars were:

Fisheries Education

Fisheries colleges in land locked states should plan exchange programme with colleges in coastal areas so that the students will have proper exposure in courses and field realities related to marine sector. In order to have uniform and quality education new fisheries colleges to be started by state governments should follow the Lakra committee guidelines. Courses on physiology, pharmacology, therapeutics, drugs in aquaculture should be made mandatory in B.F.Sc, curriculum to empower fisheries graduates to provide support to and to act as certified aquaculture health professional.

Marine Seaweeds

Seaweed culture and its products have the potential to be used as nutraceuticals and in the production of functional foods. The income of self help groups engaged in seaweed collection can be augmented through small scale industries by promoting and popularizing them.

Juvenile Fish Landings

Adoption and implementation of a region specific suite of management and technical measures are necessary to address the issue of juvenile fish landings. Standardization of fishing vessels and restrictions of their endurance and capacities would also be needed for reduction of fishing effort

and hence by catch of juveniles. Marine Protected Area (MPA) is an effective measure to prevent overfishing and protect ecosystem services. Juvenile mortality in shrimp fish trawl systems should be reduced by using specially designed devices for the purpose.

Aquaculture

Diversification of aquaculture practices with high value indigenous fish species and genetic improvement of cultured species. Popularization and dissemination of cage culture technology should be taken up in reservoirs as a means of intensive fish production. Prioritization of ecosystem based management model for reservoir and wetland fisheries development. Promotion of Integrated Multi-Tropic Aquaculture (IMTA) as a viable option for climate smart aquaculture and development of resilient strains.

Quality & Trade

Mobile fish product vending carts and matsya mart has to be popularized for supplying quality fish and fish products to the consumers. Creation of infrastructure for maintaining cold chain facilities from catch to consumption to meet the quality regulations laid by the national and international regulatory agencies. Establishment startups for high value products from fishes and utilization of fishery by-products for industrial/pharmaceutical applications will open new vistas for business opportunities in fisheries.

6. Agricultural Extension

In this field, eleven meetings were sponsored by the Council and the themes covered were sustainability of small farmers, federating agri-students into business group for remunerative agriculture, grassroots innovations in farm production, value chain integration, women empowerment through agri-entrepreneurship for livelihood security. The salient recommendations are captured here.

Strengthening the Extension: Capacity building of the farming community (farmers, farm women, rural youth and extension personnel) in modern technologies and market-linked value addition is required to augment farmers' income. Scholarships for traditional farming, traditional medicines, healthcare and nutritional security in each SAU should be provided. ICT based market-led supply-chain extension system, through which extension system will reach to the clientele on an end to end basis must receive priority attention. Ecological agriculture in tune with sustainable development goals may be promoted among farmers as well as in school education. Leverage the National Digital Literacy Mission Programme for enhancing the livelihood skills of rural communities by channelizing the resources of various Centers of Excellence (COEs). Expand the scope and mandate of KVKs to focus on value chain, entrepreneurship, marketing and supply chain system. Emphasis may be given to short duration and drought resistant varieties to provide income support to the farmers round the year. There should be a greater focus on community rain water harvesting and recycling research with more equitable distribution of water for protecting the interests of small and marginal farmers in a watershed framework. Practices like high density

planting, introduction of high value species and popularization of promising new technologies should be made attractive for adoption by the small farmers to increase and sustain their incomes. Judicious mix of farming and non farming occupations for various rural communities should be encouraged to stabilize their income and livelihood. Facilities for grading and pathological testing should be ensured at the door step of the farmers. There is an urgent need to strengthen existing technology transfer system within the NARS (front-line extension, Agri-Business incubator, Agrinnovate India Ltd.) and to establish technology parks for commercialization both in ICAR and SAUs.

Women Empowerment: Capacity building of women and vulnerable farming communities in market intelligence, environmental issues and adverse effects of environment/ climate change on crop production and creating awareness about new technologies and products such as improved biomass stove. Indiscrete burning of forest biomass should be avoided to preserve carbon footprint of the ecosystem. Cross-learning of empowerment strategies adopted globally may be exploited for the betterment of livelihood of rural women.

Other Ideas: Reiteration of known practices and concepts such as community rain water harvesting and recycling, high density planting, introduction of high value species and popularization of promising new technologies, innovative practices like covering grape bunches with metal cones promote grassroots innovation oriented technology validation, assessment and refinement oriented projects, establishment of Hi-tech kitchen gardens in the urban areas and capacity building in organic and sustainable farming systems. Validation of valuable ancient knowledge and wisdom of *Vrikshayurveda* in traditional agriculture with modern science-based technologies needs to be taken up for strengthening Sustainable Agriculture Practices (SAP).

7. Economics, Statistics and Marketing

Eleven proposals were sponsored by the Council under the themes of role of women in agricultural production and marketing, sustainable development goals related to agriculture and farmers and advanced research methodologies in social science. The salient recommendations were as listed below:

FPOs, Marketing and e-NAM: There is a need for forward and backward linkages for efficient marketing of the agri-produce using e-NAM for which capacity building of manpower as well as ease of doing business is infused. Creating awareness about e-NAM and future market and its benefits to farmers through different extension programmes; tracing of market linkages and resulting price convergence happening out of e-NAM to assess the impact. Linking FPOs to e-NAMs and futures market; research programmes making a comprehensive and in depth analysis of various dimensions of the implementation of FPOs, futures market and e-NAM and challenges encountered and benefits realized by various stakeholders is essential. Promoting diversified roles to be performed by the FPO/ SHG on the wake of changing needs of agricultural marketing. Farmer Producer Organizations, self-help groups, cooperatives, producer companies, etc. could effectively be involved for out-scaling innovations and these organizations should have easy access

to technology, financial services, including credit and hand-holding from public organizations for promoting demand-driven innovations in the broader national interest. Customized strategies for large and small farmers regarding skill development, promotion and replication of successful FPOs, financial inclusion and infrastructure development are recommended. Agri smart cities, pilot plants for processing and production of value added products, solar equipment centers, modern storage facilities are important to attract rural youth in agriculture. Development of cost effective storage systems for farm level storage (capacity 0.5-2 tonnes) and for agro-processing industries (capacity 1000- 5000 tonnes) and design and development of modern warehouses for bag storage structures (capacity > 10,000 tonnes). Improvement in design of godowns, their mechanization for grain handling, environment control and fumigation etc. requires attention.

In the field of **statistics**, augmenting new methods/tools in bioinformatics and genetics as well as vulnerability assessment for different agro-ecologies/production system at micro level region so as to identify specific adaptation strategies to cope up with the climate change and associated environmental shocks and disasters are required. The NARS may step up research on **Big Data in Agriculture** so as to integrate farming under digital platform. Costal agro forestry research must be promoted for environmental and livelihood security.

Other Ideas: Funding may be increased for agriculture research, education and development so as to match with the agri-output. Production of non-wood forest products (NWFPs) to enhance economic and nutrition security should be given emphasis for poor people in tribal areas. Increase in area under pulses by utilizing fallow lands and adopting intercropping in pulses. Modern education tools such as Para agriculture schools may be increased.

8. Agricultural Engineering

Eleven meetings were organized on the themes falling under the mandate of this Division. The salient recommendations are summarized below:

Facilitation of Mechanization: There is an urgent need to innovate custom service or a rental model by institutionalization for high cost farm machinery and can be adopted by private players or Governmental organizations in major production hubs. To achieve higher production levels, the quality of farm operations like seedbed preparation, sowing, application of fertilizer, chemicals and irrigation water, weeding, harvesting and threshing will have to be improved by using precision and efficient equipment. Promotion of R & D activities for innovation of new tools and techniques for *Divyang* and imparting skills through National Skill Development Corporation; provision of financial support to needy disabled farmers for procuring state-of-the art newly assistive devices through PSUs/PSBs under CSR activities; establishment of a farm machinery bank especially in low farm power availability regions for machines being manufactured elsewhere in the country. There is need to use drone and satellite imageries to delineate the areas affected by drought, pest and disease incidence, nutritional stress, and potential water resources.

Clean Energy: More use of solar energy source for water pumping and mechanical farming activities at village level needs to be promoted.

Research of Nano technology in agriculture especially in seed treatment, nutrient management, pesticide use, waste disposal etc. must be encouraged.

9. Agricultural Education

Two conferences were organized during this period. Notable recommendations were learning ecosystem must be strengthened with inter-weaving of best practices including e-media and ICT tools; education on disaster management e.g. weather, flood, drought etc. may be incorporated in graduate programmes; strong and long-term linkages should be established between AUs and corporate sector; students should be encouraged to get actively involved under experiential learning in production and sale of agricultural products such as vermi-compost, fruits/vegetable juice, sauce, jam, ketchup, honey etc. through ATIC; Alumni and industry interface with the university/ colleges must be enhanced to promote agri entrepreneurship and the need to integrate plant biology in the curriculum of engineering physics, chemistry, biotechnology, and other discipline due to the increased applications of bio-inspired and bio-sources products and technology.

The IAUA Golden Jubilee – International Conference on Agricultural Education-Sharing Global Experience in addition advocated the establishment of an EARTH University on the model of the EARTH University in Costa Rica and the “World Grant University” to encapsulate multispectral international collaboration to support development of an active and continuous long-term relationship-based international cooperation. The recommendations and the framework of V Deans Committee must be implemented to expose agricultural graduates in agri-entrepreneurship and start up.



CROP SCIENCE



CS 1

i	Name of the Society	The Agricultural Society of India, Kolkata
ii	Title	National Symposium on Agriculture and Food Production- Today and Tomorrow
iii	Venue and Date(s)	February, 2017
iv	Amount of grant by ICAR	Rs. 1.50 Lakhs
v	ICAR's Sanction no.	F. No.23(51)/2016-Cdn.(Tech.)
vi	Recommendations:	
	<ul style="list-style-type: none"> ◆ Critical analysis to understand basic mechanism of Abiotic stresses in rice, pulses and oilseeds crops and to develop strategies to combat such stresses in changing climate needs attention. ◆ Research efforts towards germplasm collection, evaluation and conservation of different species of crops and vegetable crops may be encouraged. ◆ Site-specific nutrient management with integrated system should be followed to maintain soil health including suitable beneficial microbial isolates from the soil to mitigate heavy metal and arsenic pollution from the soil ecosystem. ◆ On farm research with various crops with NPK and Zinc, Sulfur, Nano fertilizers are necessary in increasing their use efficiency as well as increasing crop production. ◆ Improvement of sunflower production with organic and inorganic sources of nutrients should be encouraged. 	

CS2

i	Name of the Applicant	Society of Plant Protection Sciences, ICAR-NCIPM, LBS Centre, Pusa Campus, New Delhi.
ii	Title	12th National Symposium on Biotic Stress Management Strategies: Challenges and Environmental Harmonization
iii	Venue and Date(s)	17-19 February, 2017 at Uttar Banga Krishi Viswavidyalaya, Cooch Behar (West Bengal).
iv	Amount of grant by ICAR	Rs. 1.50 Lakhs
v	ICAR's Sanction no.	F.No.23(96)/2016-Cdn.(Tech.)
vi	Recommendations:	
	<ul style="list-style-type: none"> ◆ There is an urgent need to have a comprehensive review of the GM technologies and necessary approvals within rules should be facilitated. ◆ Region specific target key pests should be identified and controlled through eco-friendly methods. ◆ The genes responsible for resistance should be characterized and incorporated into desirable crop cultivars using biotechnological tools. 	

CS3

i	Name of the Applicant	Indian Society of Seed Technology, NASC Complex, New Delhi
ii	Title	XIV National Seed Seminar on Food Security Through Augmented Seed Supply under Climate uncertainties
iii	Venue and Date(s)	28-30 January, 2017 at IARI, New Delhi
iv	Amount of grant by ICAR	Rs. 2.50 Lakh
v	ICAR's Sanction no.	F.No.23(102)/2016-Cdn.(Tech.)
vi	Recommendations:	<ul style="list-style-type: none"> ◆ Concerted efforts are needed for early clearance and passage of New/Revised Seed Bill and the Biotechnology Regulatory Authority of India Bill. ◆ The Intellectual Property landscape should be simplified / relaxed for the seed industry with reference to issues related to NBA/IPR/PVP&FRA, especially in the context of export/import and patents. ◆ The current business environment for seed sector should be re-assessed and adequate policy support should be provided, so to achieve the target of doubling farmers' income by 2022. ◆ The establishment of Community Seed Banks for conservation of local genetic material and interlinking the Banks with seed business (especially in the north east) should be a periodical exercise. ◆ Novel local seed systems and alternative seed delivery models should be strengthened. A system of bringing the popular local / traditional / farmer varieties in the formal seed chain needs to be considered. NSC and other SSCs may be entrusted with the responsibility of seed production, quality assurance and marketing. ◆ In view of the shifts in the weather patterns, old varieties need to be evaluated under different changing weather conditions now, instead of discarding. ◆ Modern methods of seed quality assessment need to be adopted for higher precision and uniformity, using advanced technologies and appropriate instruments. ◆ Reporting of 'seed vigour' status should be made compulsory in case of revalidated seed lots for ensuring satisfactory field performance of a seed lot.

CS4

i	Name of the Applicant	The Entomological Society of India, Division of Entomology, IARI, New Delhi
ii	Title	10th International Conference on Controlled Atmosphere and Fumigation in Stored Products
iii	Venue and Date(s)	7-11 November, 2016 at Hotel the Ashok, New Delhi

iv	Amount of grant by ICAR	Rs. 10.00 Lakhs
v	ICAR's Sanction no.	F.No.24(6)/2016 Cdn. (Tech.)
vi	Recommendations: <ul style="list-style-type: none"> ◆ Need for development of cost effective storage systems for farm level storage (capacity 0.5-2 tonnes) and for agro-processing industries (capacity 1000- 5000 tonnes) and design and development of modern warehouses for bag storage structures (capacity > 10,000 tonnes). ◆ Training of farmers and grain storage agency workers on Bulk Storage Systems with long life may be more suitable for farm level and for agro processing units as these are not required to distribute the grain to distant places. ◆ Improvement in design of godowns, their mechanization for grain handling, environment control and fumigation etc. requires attention. 	

CS5

i	Name of the Applicant	Association for Advancement in Plant Protection (AAPP), Bidhan Chandra Krishi Viswavidyalaya, Nadia, West Bengal
ii	Title	National Symposium on Impact of Climate Change biodiversity and good plant practices for crop productivity
iii	Venue and Date(s)	22-23 December, 2016 at BCKV, Kalyani West Bengal;
iv	Amount of grant by ICAR	Rs. 1.00 Lakh
v	ICAR's Sanction no.	F.No.23(73)/2016-Cdn. (Tech.)
vi	Recommendations: <ul style="list-style-type: none"> ◆ Development of compounds affecting different targets like ryanodine receptor modulators, GABA gated chloride channels, uncoupling oxidative phosphorylation inhibition of ATP syntheses, intervening mitochondrial metabolic modulations etc. offer scope for judicious rotation of chemistries depriving target pest to develop resistance to pesticides. 	

CS6

i	Name of the Applicant	Association of Agro Meteorologists, Department of Agricultural Meteorology, AAU, Anand, New Delhi
ii	Title	National Seminar (AGMET) on Agro meteorology for sustainable Development with special emphasis on Agrometeorological Practices for Climate Resilient Farming and Food Security

iii	Venue and Date(s)	12-14 October 2017 at College of Agriculture, CCS HAU, Hisar, Haryana
iv	Amount of grant by ICAR	Rs. 2.50 Lakh
v	ICAR's Sanction no.	F.No.23(46)/2017-Cdn.(Tech.)
vi	Recommendations: <ul style="list-style-type: none"> ◆ Creation of E-Agromet Knowledge Bank using advanced ICT tools at state level needs to be encouraged following the initiatives of ICAR for Climate Resilient Agriculture. ◆ Agro-meteorology being a comparative young but essential discipline, exclusive opportunities be created for human resources development and advanced level training at ASRB/ICAR/SAUs. ◆ ICAR should encourage the SAUs to establish separate Department of Agricultural Meteorology in each SAU and start PG programs. ◆ ICAR may institute Advance Training Centers in Agricultural Meteorology. Setting up a center within the administrative structure of ICAR will certainly boost the climate change research activities in agriculture in India. 	

CS7

i	Name of the Applicant	ICAR-Sugarcane Breeding Institute, Coimbatore, Tamil Nadu
ii	Title	International Symposium on Sugarcane Research : 100 Years and Beyond
iii	Venue and Date(s)	18-21 September, 2017 at ICAR-SBI, Coimbatore
iv	Amount of grant by ICAR	Rs. 7.00 Lakh
v	ICAR's Sanction no.	F.F.No.24(7)/2017-Cdn(Tech)
vi	Recommendations: <ul style="list-style-type: none"> ◆ A distribution map of the Saccharin genetic resources in India may be prepared based on the collections made. ◆ Characterization of the germplasm should be done for tolerance with respect to high temperature, water stress, water logging, salinity and enhanced CO2 availability. ◆ The long history of sugarcane breeding has given valuable information on parental behavior, across performance and progeny values, which have to be put in as databases. ◆ There is need to use drone and satellite imageries to delineate the areas affected by drought, pest and disease incidence, nutritional stress, and potential water resources and also sugarcane yield and quality assessment. 	

CS8

i	Name of the Applicant	All India Agricultural Students Association (AIASA), NASC Complex, New Delhi.
ii	Title	National Youth Convention on Agriculture Innovations on Food and Nutritional Security and Rural Livelihood Sustainability
iii	Venue and Date(s)	20 th February, 2017; University of Agricultural Sciences-Raichur
iv	ICAR's Sanction F. No. and Date	Rs. 3.00 Lakhs
v	ICAR's Sanction no.	F. No. 23(103)/2016-Cdn.(Tech.)
vi	Recommendations:	<ul style="list-style-type: none"> ◆ There is a need of providing basic knowledge of agriculture at the primary level education. ◆ Government should provide financial assistance to the farmers in the form of credits and provision for construction of warehouses for storage of agri-products to prevent market glut. ◆ Modern education tools such as para agriculture schools, agri smart cities, pilot plants for processing and production of value added products, solar equipment centers, modern storage facilities are important to attract rural youth in agriculture.

CS9

i	Name of the Applicant	Indian Society of Agricultural Biochemists, C.S. Azad University of Agriculture & Technology, Kanpur.
ii	Title	International conference on Nutraceuticals and Functional Foods-The challenges and opportunities
iii	Venue and Date(s)	6-8 December, 2016 at Anand Agricultural University, Anand
iv	Amount of grant by ICAR	Rs. 5.00 Lakhs
v	ICAR's Sanction no.	F.No.24(7)/2016 Cdn. (Tech.)

vi	<p>Recommendations:</p> <ul style="list-style-type: none"> ◆ Bioinformatics tool should be used to decipher gene content, transcriptional network and metabolic pathways in silico and to identify promoters which are involved in the expression of specific genes in plants. ◆ Sesame oil and its secondary metabolite sesamol should be used in food for reducing stress and enhancing the ethical values. ◆ Scientific validation of claims, effect of processing on shelf life and stability of foods dosage and safety aspects need be established for most of the Indian foods and nutraceuticals. ◆ Transgenic approach in pulses particularly chickpea and pigeonpea should be adopted for nutritional security and sustainability. ◆ Lycopene from tomato may be used for neuro-protection and anti-ageing in humans.
-----------	---

CS10

i	Name of the Applicant	ICAR-National Bureau of Agricultural Insect Resources, Bangalore
ii	Title	One Day Brain Storming on invasive Rugose Spiraling Whitefly <i>Aleurodicus rugioperculatus</i>
iii	Venue and Date(s)	20-21 March, 2017 at Tamil Nadu Agricultural University (TNAU) Coimbatore
iv	Amount of grant by ICAR	Rs. 1.50 Lakh
v	ICAR's Sanction no.	F.No.23(2)/2017-Cdn.(Tech.)
vi	<p>Recommendations:</p> <ul style="list-style-type: none"> ◆ Timely management strategy of the pest to avoid sooty mould should be developed. ◆ Awareness cum training program on Rugose Spiraling Whitefly (RSW) may be provided to the Customs officers working at International Airports/Sea Ports/ Land Frontiers. 	

CS11

i	Name of the Applicant	Indian Society of Plant Pathologists, Dept. of Plant Pathology, PAU, Ludhiana
ii	Title	National Symposium on Bio-rational Management of Plant Diseases
iii	Venue and Date(s)	27-29 October, 2017 at Dr. Y.S. Parmar University of Horticulture & Forestry, Nauni, Solan

iv	Amount of grant by ICAR	Rs. 2.00 Lakh
v	ICAR's Sanction no	F.No.23(17)/2017-Cdn.(Tech.)
vi	Recommendations: <ul style="list-style-type: none"> ◆ Web based decision support system should be put in place for sharing disease situations and rational use of fungicides. ◆ Facilities for grading and pathological testing should be ensured at the door step of the farmers. ◆ Effort should be made to adopt only recommended varieties and avoid monoculture to prevent emergence of new pathogens/new races of the pathogens and disease epidemics. 	

CS12

i	Name of the Applicant	Trust for Advancement of Agricultural Sciences (TAAS), IARI, New Delhi
ii	Title	National Conference on Preparedness of Indian Agriculture vis a vis Sustainable Development Goals (SDG)
iii	Venue and Date(s)	11-12 May 2017 at NASC Complex, New Delhi
iv	Amount of grant by ICAR	Rs. 2.00 Lakh
v	ICAR's Sanction no.	F.No.23(9)/2017-Cdn.(Tech.)
vi	Recommendations: <ul style="list-style-type: none"> ◆ Need to strengthen conventional plant breeding (including pre-breeding) and emphasize on adoption of GM technology both in field and horticultural crops for which policy support is needed. ◆ Availability of good quality seed including hybrids and planting material is the need of hour. ◆ Work on pre-and post harvest losses are to be strengthened. 	

CS13

i	Name of the Applicant	Department of Botany, University of Jammu, Jammu & Kashmir.
ii	Title	National Conference on Fungal Biology: Recent Trends and Future Prospects & 44 th Annual Meeting of Mycological Society of India
iii	Venue and Date(s)	16 to 18 Nov. 2017 at Department of Botany, University of Jammu, Jammu & Kashmir

iv	Amount of grant by ICAR	Rs. 2.00 Lakh
v	ICAR's Sanction no.	F.F.No.23(32)/2017-Cdn.(Tech.)
vi	Recommendations: <ul style="list-style-type: none"> ◆ Fungal studies need to be popularized in Union Territories of Jammu & Kashmir and Leh & Ladakh as the region is rich in macro-fungal resources due to varied agro-climate zones. The University of Jammu, Jammu and Agricultural Universities of the region should explore the possibilities of collaborative research in this regard. ◆ There is an ardent need to create some fungal culture collection centers for availability of authentic fungal cultures for advanced studies. 	

CS14

i	Name of the Applicant	Trust for Advancement of Agricultural Sciences (TAAS), IARI, New Delhi
ii	Title	National Symposium on Plant Health Management: Embracing Eco-Sustainable Paradigm
iii	Venue and Date(s)	15-17 February 2018 at Assam Agricultural University, Jorhat
iv	Amount of grant by ICAR	Rs. 5.00 Lakh
v	ICAR's Sanction no.	F.No.23(35)/2017-Cdn.(Tech.)
vi	Recommendations: <ul style="list-style-type: none"> ◆ Climate change impact on plant health should be given more emphasis. In this regard two diseases specially mentioned are Cercospora disease and Spot blotch in wheat. ◆ Certain disease like smut of wheat and powdery mildew diseases earlier considered to be of minor importance has become major ones, needs special attention. ◆ Domestic and International quarantine regulatory measures should be strengthened. ◆ Morphological taxonomy should go hand in hand with chemo- and molecular taxonomy. ◆ Commercialized microbial formulations need to be strictly covered under regulatory measures to maintain qualitative standards. 	

CS15

i	Name of the Applicant	Trust for Advancement of Agricultural Sciences (TAAS), IARI, New Delhi
ii	Title	National policy Dialogue on Incentives and Strategies for Scaling Out Innovations for Small holders

iii	Venue and Date(s)	30-31 October 2017 at NASC Complex, New Delhi
iv	Amount of grant by ICAR	Rs. 2.00 Lakh
v	ICAR's Sanction no.	F.No.23(38)/2017-Cdn.(Tech.)
vi	Recommendations: <ul style="list-style-type: none"> ◆ Institutional/Innovation platforms are essentially needed to encourage much needed scientist/farmer and public-private partnership. ◆ There is an urgent need to strengthen existing technology transfer system within the NARS (front-line extension, Agri-Business incubator, Agrinnovate India Ltd.) and to establish technology parks for commercialization both in ICAR and SAUs. ◆ It is recommended that Farmer Producer Organizations, self-help groups, cooperatives, producer companies, etc. could effectively be involved for out-scaling innovations and these organizations should have easy access to technology, financial services, including credit and hand-holding from public organizations for promoting demand-driven innovations in the broader national interest. 	

CS16

i	Name of the Applicant	Indian Society of Genetics and Plant Breeding, NASC Complex, New Delhi.
ii	Title	Platinum Jubilee Celebration of ISGPB and Brainstorming Session on Role of Plant Breeding and Genetics in meeting sustainable development goals
iii	Venue and Date(s)	11 February 2017; IARI, New Delhi
iv	Amount of grant by ICAR	Rs. 1.00 Lakh
v	ICAR's Sanction no.	F.No.23(105)/2016-Cdn.(Tech.)
vi	Recommendations: <ul style="list-style-type: none"> ◆ Public sector plant breeding is facing serious challenges especially in cotton, maize, vegetable and floricultural crops and therefore, needs to be strengthened. ◆ India has rich resources of plant genetic diversity which needs to be conserved and utilized for crop improvement in a sustainable manner. ◆ Many untapped genetic resources such as wild mushrooms can be utilized for the sustainable improvement of farming communities. However, initiative must be taken to improve the mushroom varieties through innovative technologies. 	

CS17

i	Name of the Applicant	Society for Rapeseed-Mustard Research, ICAR-DRMR, Bharatpur
ii	Title	3rd National Brassica Conference (NBC-2017) on Enhancing Oilseed Brassica Production Through Climate-Smart Technologies
iii	Venue and Date(s)	16-18 February 2017 at ICAR-IARI, New Delhi
iv	Amount of grant by ICAR	Rs. 2.50 Lakh
v	ICAR's Sanction no.	F.No.23(106)/2016-Cdn. (Tech.)
vi	Recommendations:	
	<ul style="list-style-type: none"> ◆ Sustainable mustard yield should be achieved through wider exploration of genetic diversity and use of biotechnology (MAS) for improved varieties/hybrids. 	

CS18

i	Name of the Applicant	Society of Biological Science and Rural Development, Allahabad
ii	Title	National Symposium on Natural Resource Management for Sustainable Agriculture and Rural Development
iii	Venue and Date(s)	5-6 November, 2016; Vigyan Parishad Hall Maharishi Dayanand Marg, Allahabad.
iv	Amount of grant by ICAR	Rs. 1.00 Lakhs
v	ICAR's Sanction no.	F.No.23(88)/2016-Cdn.(Tech.)
vi	Recommendations:	
	<ul style="list-style-type: none"> ◆ Organic farming should be practiced in mass scale to improve soil fertility for crop productivity on sustainable basis. ◆ Application of bio-pesticides should be promoted for control of disease and pests in crops. Similarly, application of pheromones in management of insect-pests of agricultural crops and fish production should also be encouraged. 	

CS19

i	Name of the Applicant	Department of Biotechnology, Jamia- Hamdard University, New Delhi.
ii	Title	National Seminar on Biotechnology in Healthy Care Challenges and Opportunities
iii	Venue and Date(s)	18-19 March, 2018 at Convention Centre, Jamia-Hamdard, New Delhi
iv	Amount of grant by ICAR	Rs. 2.00 Lakh
v	ICAR's Sanction no.	F.No.23(111)/2016-Cdn.(Tech.)
vi	Recommendations: <ul style="list-style-type: none"> ◆ Improvement in traditional medicine needs authentication of raw material and its quality for better therapeutic efficacy. In this respect SCAR markers and metabolic engineering could be used as tools. ◆ The use of <i>Endomycorrhiza</i> and Plant Growth Promoting Rhizobacteria (PGPR) for increasing steviol glycosides in <i>Stevia rebaudiana</i> should be given emphasis, as rebaudioside-A was reported to maintain blood sugar levels in type-2 diabetes. ◆ The use of new antimalarials and the whole leaf extract of metabolically engineered tobacco and <i>Artemisia annua</i> for curing drug resistant malaria can be explored. 	

CS20

i	Name of the Applicant	National Institute of Science Education and Research, Bhubaneswar
ii	Title	International Conference on Plant Developmental Biology and 3 rd National Arabidopsis Meeting
iii	Venue and Date(s)	12-16 December 2017 at National Institute of Science Education & Research, Bhubaneswar
iv	Amount of grant by ICAR	Rs. 2.00 Lakh
v	ICAR's Sanction no.	F.F.No.24(11)/2017-Cdn.(Tech.)
vi	Recommendations: <ul style="list-style-type: none"> ◆ Arabidopsis research may be scaled up for mining agronomically important traits in crop plants for addressing future challenges in agriculture. 	

CS21

i	Name of the Society:	Indian Phytopathology Society
ii	Title:	Recent Challenges and Opportunities in Sustainable Plant Health Management
iii	Venue and Date(s):	February 26-28, 2019
iv	Amount of grant by ICAR	Rs. 5.0 Lakh
v	ICAR's Sanction no.	F.No.23 (92)/2018-Cdn. (Tech.)
vi	Recommendations:	
	<ul style="list-style-type: none"> ◆ Bio-agents are good for plant health management and focus to be given on genetic resistance for sustainable control of plant disease. ◆ Pre-emptive breeding strategy is a must to control rust or other air- borne disease of cereals. ◆ Integrated disease management is important for diseases like, guava wilt, panama wilt of banana, papaya wilt, chili leaf curl, papaya ring spot virus, phytoplasma disease and those caused by plant parasitic nematodes. ◆ Development of rapid and easily accessible diagnostic kits for major pathogens and time series studies on pathogen population dynamics in relation to climate change should be conducted. 	

CS22

i	Name of the Society:	Indian Society of Plant Pathologists
ii	Title:	Role of plant pathology in empowering and Doubling farmer 'income
iii	Venue and Date(s):	ICAR Research Complex for NEH Region, Umiam, Meghalaya from 25 to 27th October 2018
iv	Amount of grant by ICAR	Rs.2.00 Lakh
v	ICAR's Sanction no.	F.No.23 (37)/2018-Cdn. (Tech.)
vi	Recommendation:	
	<ul style="list-style-type: none"> ◆ SAUs and state agriculture departments should have joint teams to monitor status of varieties under cultivation and disease situation. 	

CS23

i	Name of the Society:	Society for Biocontrol Advancement
ii	Title:	First International Conference on Biological Control: Approaches and Application (ICBC-2018)
iii	Venue and Date(s):	Hotel Le Meridien, Bengaluru 27-29 September 2018
iv	Amount of grant by ICAR	Rs. 7.50Lakh
v	ICAR's Sanction no.	F.No.23 (3)/2018-Cdn (Tech)
vi	Recommendations:	
	<ul style="list-style-type: none"> ◆ Collaborative research programs on RNA mediated insect pest management with the international laboratories must be taken up. ◆ Surveys and collection need to be strengthened to find out efficient predators/parasitoids for biological control of some sucking insects pests. ◆ Quantitative data on the occurrence of invasive pests need to be developed involving all stakeholders. ◆ Compatible components in biotechnological control of crop pests and diseases and Abiotic Stress tolerance in natural enemies of crop pests may be developed. 	

CS24

i	Name of the Society:	Indian Society of Agricultural Biochemists
ii	Title:	Food and Nutritional Security Conclave
iii	Venue and Date(s):	Mahatma Phule Krishi Vidyapeeth, Rahuri - 413722, Maharashtra , February 25 to 27 , 2019
iv	Amount of grant by ICAR	Rs.1.00 Lakh
v	ICAR's Sanction no.	F.No.23 (68)/2018-Cdn. (Tech.)
vi	Recommendations:	
	<ul style="list-style-type: none"> ◆ Accelerated and coordinated efforts should be made in the area of translational genomic research in combination with agronomy for delivering faster genetic gains on farmers' fields. ◆ The side effects of long term consumption of nutraceuticals products need to be established on scientific basis. ◆ Transcriptome analysis in Alphonso mango should be done to understand its unique characteristics. ◆ Green fractionation technology needs to be adopted and commercialized to produce useful products. ◆ Conventional phenotyping must be supplemented by GPS, proximal sensing and remote sensing to improve efficiency in crops. 	

CS25

i	Name of the Society:	Department of Botany and Microbiology, Acharya Nagarjuna University, Guntur-52251 Andra Pradesh
ii	Title:	5th Asian PGPR National conference for sustainable and organic agriculture
iii	Venue and Date(s):	Acharya Nagarjuna University, Guntur-52251 23.02.2019 to 25.02.2019
iv	Amount of grant by ICAR	Rs. 5.00Lakhs
v	ICAR's Sanction no.	23 (80)/2018-Cdn. (Tech.)
vi	Recommendations:	<ul style="list-style-type: none"> ◆ Crop specific modules for organic farming to be developed incorporating the beneficial PGPR component and should be taken up on entire village basis. ◆ Engineering microbes for sustainable crop productivity and utilization to be systematically demonstrated involving the line departments.

CS26

i	Name of the Society:	Indian Society of Genetics and Plant Breeding
ii	Title:	First National Genetics Congress on Genetics for Sustainable Food, Health and Nutrition Security
iii	Venue and Date(s):	Dr. B.P. Pal Auditorium, Indian Agricultural, Research Institute, New Delhi-110012 14-16 December, 2018
iv	Amount of grant by ICAR	Rs. 5.00Lakhs
v	ICAR's Sanction no.	F.No.23 (38)/2018-Cdn. (Tech.)

vi **Recommendations:**

- ◆ Public sector plant breeding is facing serious challenges especially in cotton, maize, vegetable and floricultural crops. It is, therefore, recommended that a one-day brain storming workshop be organized to discuss this issue.
- ◆ Greater emphasis is laid on identification and mapping of OTL (check QTL)? for Abiotic stresses and for productivity traits, and assembling of QTL with diverse mechanisms through MAS in important crops.
- ◆ Strengthening of research is needed on the development of transgenic and to establish a single central facility for undertaking bio-safety and IPR issues.
- ◆ Strengthening of research in functional genomics and bioinformatics with a major focus on annotating gene functions and utilization of RNA technology for nutritional enhancement be given priority.
- ◆ Use of off-season nurseries should be an integral part of a breeding program in order to speed up the breeding cycle.
- ◆ In crops such as wheat, maize, basmati rice, and some vegetables where feasibility of DH approach has been demonstrated, the operation needs to be scaled up or initiated as the case may be.



HORTICULTURE SCIENCE



HS1

i	Name of the Applicant	The Orchid Society of India (TOSI), Dept. of Botany, Punjab University, Chandigarh
ii	Title	National Conference cum Workshop on Recent Trends in Biology, Culture, Conservation, Commercialization and Sustainable Utilization of Important Orchids of Medicinal and Floricultural importance.
iii	Venue and Date(s)	10-12 March 2017 at Graphic Era (Deemed) University, Dehradun
iv	Amount of grant by ICAR	Rs. 2.00 Lakhs
v	ICAR's Sanction no.	F.No.23(100)/2016-Cdn.(Tech.)
vi	Recommendation:	<ul style="list-style-type: none"> ◆ Studies on reproductive and pollination biology, development of cost effective mass propagation protocols of orchid species with medicinal and floricultural importance is recommended for future research and development.

HS2

i	Name of the Applicant	Indian Society for Spices, Kozhikode, Kerala
ii	Title	National Symposium on Spices and Aromatic Crops (SYMSAC -IX)
iii	Venue and Date(s)	15-17 March 2018 at School of Agricultural Sciences and Rural Development, Nagaland University, Nagaland
iv	Amount of grant by ICAR	Rs. 2.50 Lakh
v	ICAR's Sanction no.	F. No. 23(25)/2018-Cdn. (Tech.)
vi	Recommendations:	<ul style="list-style-type: none"> ◆ Successful farmer Producer Companies need to be promoted in NER for value chain management in spices. ◆ Awareness regarding marketing requirement, quality criteria, post harvest management and value addition through involvement of governmental and non-governmental agencies is required. ◆ Production and distribution for diseases-free quality planting material should be promoted through accredited nurseries.

HS3

i	Name of the Applicant	Bidhan Chandra Krishi Vishwavidyalaya, Mohanpur, Nadia, West Bengal
ii	Title	National Symposium on Recent Advances on Floriculture and Urban Horticulture in Global Perspective
iii	Venue and Date(s)	4-5 January 2018 at Farmers Academy & Conservation Centre (Lake Hall), BCKV, Kalayani
iv	Amount of grant by ICAR	Rs.1.00 Lakh
v	ICAR's Sanction no.	F. No. 23(52)/2017-Cdn(Tech)
vi	Recommendations:	<ul style="list-style-type: none"> ◆ Need for promotion of flower based by product industries and strengthening of R&D in flower crops. ◆ Transgenic approach devoid of social, ethical issues should be taken up for effective pest management strategy. ◆ Sustainable use of native plants in landscaping should be promoted.

HS4

i	Name of the Applicant	Centre for Innovation in Science and Social Action (CISSA), Vellayambalam, Thiruvananthapuram
ii	Title	National Banana Festival 2018 (NBF 2018)
iii	Venue and Date(s)	17-21 February 2018 at Kalliyoor, Thiruvananthapuram, Kerala
iv	Amount of grant by ICAR	Rs. 2.00 Lakh
v	ICAR's Sanction no.	F. No. 23(60)/2017-Cdn(Tech)
vi	Recommendations:	<p>Efforts should be taken to popularize technologies developed by institutions like ICAR-NRC Banana, CFTRI and various Agricultural Universities in value addition.</p> <p>Initiatives to enhance export of banana with necessary infrastructure like storage facilities, refrigeration, packaging units should be established.</p>

HS5

i	Name of the Society:	Society for promotion of Horticulture, ICAR- IIHR, Bengaluru
ii	Title:	National Horticulture Fair- 2019
iii	Venue and Date(s):	ICAR- IIHR Bengaluru, 23-25 January 2019
iv	Amount of grant by ICAR	Rs. 5.0 Lakh
v	ICAR's Sanction no.	F.No.23 (70)/2018-Cdn (Tech)
vi	Recommendations:	<ul style="list-style-type: none"> ◆ Systems to develop robots for production of grafts in vegetables especially in tomato, chilly and gourds should be explored. ◆ There is need to harmonize international Phytosanitary standards and regulations for fresh fruits & vegetables. Horticultural scientists around the world need to work together to make progress in the areas of pollinators research, rootstock breeding, lines, vertical farming, robotics and mechanization of farming. ◆ Prospects of conservation of future fruits through custodianship <i>in situ</i> areas must be explored. <i>In situ</i> Conservation of identified commodities supported through communities and volunteer farmers in forest eco system to be explored. E-pest surveillance and monitoring should be standardized with latest GPS based, real time and robotic tools for important horticultural crops

HS6

i	Name of the Society:	The Orchid Society of India (TOSI)
ii	Title:	National Seminar on Advances in Orchidology with reference to Biology, Climate Change, Conservation, and Commercialization of Culturally and Therapeutically Important Taxa of Orchids
iii	Venue and Date(s):	ICAR-CIARI, Port Blair, 15th to 17th February, 2019
iv	Amount of grant by ICAR	Rs. 2.00 Lakhs
v	ICAR's Sanction no.	F.No.24 (43)/2018-Cdn. (Tech.)

vi	<p>Recommendations:</p> <ul style="list-style-type: none"> ◆ Mass propagation protocols should be developed for medicinally and Floricultural important and/or RET (Rare, Endangered and Threatened) species using tissue culture techniques and attempts should be made to conserve them by restoring them back into their natural habitats. ◆ Studies on orchid diversity in India involving various stakeholders in conservation programmes should be carried out in the unexplored regions of A&N islands.
----	---

HS7

i	Name of the Society:	The Horticultural Society of India Renamed as Indian Academy of Horticultural Sciences (IAHS)
ii	Title:	8th Indian Horticulture Congress-2019 on Shaping the Future of Indian Horticulture
iii	Venue and Date(s):	Indira Gandhi Krishi Vishwavidyalaya, Raipur, Chhattisgarh, 17th to 21th January, 2019
iv	Amount of grant by ICAR	Rs. 2.00Lakhs
v	ICAR's Sanction no.	F.No.23 (10)/2018-Cdn. (Tech.)
vi	<p>Recommendations:</p> <ul style="list-style-type: none"> ◆ Research on Bio-reactor method for Hi Volume planting material need to be initiated on the different horticultural crops to meet the current and future requirements. ◆ Rapid multiplication of the seed potato tubers through tissue culture in conjunction with Aeroponics systems to be explored. ◆ Establishment of dedicated seed gardens required for mass multiplication of high oil yielding genotypes of oil palm coconut seed gardens. ◆ Wild relatives of horticultural crops need to be explored against biotic & abiotic stresses and desired nutritional traits to develop/improve high yielding commercial varieties. ◆ Models for Ponics Horticulture (hydroponics, aeroponics, aquaponics, etc.) systems especially for small holders needs to be devised with technology simplification and promoted with adequate incentives. 	

HS8

i	Name of the Society:	Lt. Amit Singh Memorial Foundation, New Delhi
ii	Title:	International Conference on Innovative Horticulture and Value Chain Management
iii	Venue and Date(s):	GBPUA&T, Pant Nagar, 28th to 31st, May 2019
iv	Amount of grant by ICAR	Rs.3.00Lakh
v	ICAR's Sanction no.	F.No.24 (29)/2018-Cdn. (Tech.)
vi	Recommendations:	
	<ul style="list-style-type: none"> ◆ Improved planting stock through high-tech nurseries and use of hybrids in vegetable have to be emphasized to boost the production in horticultural crops. ◆ Diagnostics based on nanotechnology, Nano-pheromone for insect, and Nano-sheets for packing need to be encouraged. 	



**NATURAL RESOURCE
MANAGEMENT
(NRM)**



NRM 1

i	Name of the Applicant	School of Energy, Environment and Natural Resources, Madurai Kamaraj University, Madurai
ii	Title	9 th NABS National Conference on New Biological Researches: Opportunities and Challenges for Sustainable Development (Agriculture, Biology, Energy, Environment, Health and Climate Change)
iii	Venue and Date(s)	11-12 August, 2016 at School of Energy, Environment and Natural Resources, Madurai Kamaraj University, Madurai, Tamil Nadu
iv	Amount of grant by ICAR	Rs. 1.00 lakh
v	ICAR's Sanction no.	F. No. 23(14)/2016-Cdn.(Tech.)
vi	Recommendation: <ul style="list-style-type: none"> ◆ A subject matter expert committee may be formulated to scrutinize the proposed research gaps with respect to their viability, potentiality, social importance and commercialization. 	

NRM 2

i	Name of the Applicant	Indian Society of Soil Science, National Societies Block, NASC Complex, New Delhi.
ii	Title	National Seminar on the topic "Sustainable Pulse Production: with less for more"
iii	Venue and Date(s)	20-23 October, 2016 at Rajmata Vijayaraje Scindia Krishi Vishwa Vidyalaya, Gwalior, Madhya Pradesh
iv	Amount of grant by ICAR	Rs. 2.00 Lakh
v	ICAR's Sanction F. No. and Date	F.No.23(19)/2016-Cdn.(Tech.)
vi	Recommendation: <ul style="list-style-type: none"> ◆ Specific integrated approach developed for wilt and gram pod borer management has to be tried and tested. ◆ Two to three rows of short duration legumes such as mungbean/urdbean can be successfully planted on ridges. This system helps in reducing quantity of irrigation water, and also minimizes incidence of Phytophthora blight in pigeonpea. 	

NRM 3

i	Name of the Applicant	Indian Society of Agro forestry, ICAR- Central Agro forestry Research Institute, Gwalior Road, Jhansi
ii	Title	National Symposium on Agro forestry for environmental challenges, sustainable land use, biodiversity conservation and rural livelihood
iii	Venue and Date(s)	3-5 December 2016 at ICAR-Central Agro forestry Research Institute, Jhansi
iv	Amount of grant by ICAR	Rs. 3.50 Lakh
v	ICAR's Sanction no.	F.No.23(24)/2016-Cdn(Tech)
vi	Recommendation:	<ul style="list-style-type: none"> ◆ Protocols should be developed for analysis of environmental, ecological and economical attributes of different agroforestry systems on landscape basis. ◆ Accreditation and gradation of germplasm centres/nurseries of important agroforestry species in different agro-climatic zones of country should be initiated. ◆ Implements for harvesting agroforestry products such as leaves, pods, fruits etc. and processing up to net utilizable products involving industry should be developed. ◆ Documentation, identification and standardization of climate resilient (such as efficient in CO₂ assimilation, efficient water utilizer, high temperature tolerant, shade tolerant and multi – stress tolerant) agroforestry germplasm is to be carried out.

NRM 4

i	Name of the Applicant	Society for Advancement of Human and Nature (SADHNA), Dr. Y.S. Parmar University of Horticulture & Forestry, Nauni, Solan
ii	Title	National Symposium on Advances in Agriculture through Sustainable Technologies and Holistic Approaches (AASTHA)
iii	Venue and Date(s)	15-17 February 2017 at The International Centre, Dona Paula, Goa
iv	Amount of grant by ICAR	Rs. 2.00 Lakhs
v	ICAR's Sanction no.	F.No.23(38)/2016-Cdn.(Tech.)

vi	<p>Recommendation:</p> <ul style="list-style-type: none"> ◆ There is ample scope and feasibility for developing multi-species aquaculture practices in unutilized semi-enclosed coastal areas of Goa as a secondary livelihood option. ◆ Stubble shredding, off-barring, root pruning and fertilizer placement (SORF) machine could be used successfully for seeding of mungbean under surface retained chopped trash condition. ◆ The plasma treatment on the seed coat of capsicum can enhance the germination speed by making seed coat more hydrophilic. ◆ In cold deserts the trench technology is of immense use to the farming community for fresh vegetable production.
-----------	--

NRM 5

i	Name of the Applicant	Association of Agro-meteorologists, Department of Agricultural Meteorology, AAU, Anand.
ii	Title	National Symposium on Climate driven Food Production Systems: Agro meteorological Interventions
iii	Venue and Date(s)	20-22 December, 2016 at Agro Climate Research Centre, TNAU, Coimbatore, Tamil Nadu
iv	Amount of grant by ICAR	Rs. 2.00 Lakhs
v	ICAR's Sanction no.	F.No.23(39)/2016-Cdn.(Tech.)
vi	<p>Recommendation:</p> <ul style="list-style-type: none"> ◆ More emphasis needs to be given to develop operational pest-weather models as well as modify the thresholds of existing rule based models keeping in view the pest biology in relation to local weather. ◆ Micrometeorological studies related to characterization of agro-climatic resources for major crops of the country needs to be enhanced. ◆ Spectral reflectance studies for developing suitable vegetation index at critical crop phenological stages that relates to final crop yield need to be taken up. ◆ Solution to bring awareness about agro-advisory bulletin and action programme, among illiterate farmers in tribal and remote areas need to be worked out. 	

NRM 6

i	Name of the Applicant	Indian Society of Soil Salinity and Water Quality, CSSRI, Karnal in collaboration with Swami Keshwanand Rajasthan Agricultural University, Bikaner (Rajasthan)
----------	------------------------------	---

ii	Title	National Seminar on Climate Resilient Saline Agriculture: sustaining livelihood security
iii	Venue and Date(s)	21-22 January 2017 at Bikaner (Rajasthan)
iv	Amount of grant by ICAR	Rs. 2.50 Lakhs
v	ICAR's Sanction no.	F.No.23(46)/2016-Cdn(Tech)
vi	Recommendation:	<ul style="list-style-type: none"> ◆ Agro-climatic regions based drainage guidelines to take care of variations in design parameters and consequent costs of sub-surface drainage systems are required for faster implementation of SSD projects and reclamation of water logged saline soils. ◆ Biodiversity conservation needs to be integrated with possible impacts of changing climate to ensure long term sustainability of reclamation and management of SAS and PQW in inland and coastal regions. ◆ Synergy among Nano-bio and phyto-remediation and sensor based precision technologies and plant growth promoting microbes and their consortia should get priority for reclamation and management of SAS. ◆ Use of CSR-BIO PLUS for fertilizer saving and endophytes should be done for in-vitro bio-hardening for successful cultivation of banana in reclaimed sodic soils. ◆ Resource Conservation Technologies (RCTs) need to be utilized to sustain crop production in Western Rajasthan. Multi-purpose and potential trees such as Drum stick (<i>Moringa oleifera</i>) which is highly nutritive vegetable and good fodder need to be worked out for dry ecologies.

NRM 7

i	Name of the Applicant	Institute of Environment and Sustainable Development, BHU, Varanasi
ii	Title	National Conference on Managing Soil Resource for Environmental Sustainability: Challenges and Perspectives
iii	Venue and Date(s)	9-10 December 2016 at Institute of Environment & Sustainable Development, BHU, Varanasi
iv	Amount of grant by ICAR	Rs. 2.00 Lakhs
v	ICAR's Sanction no.	F.No.23(70)/2016-Cdn(Tech)
vi	Recommendation:	<ul style="list-style-type: none"> ◆ Regaining essential ecosystem functions by developing site and ecosystem specific practices is urgently needed. ◆ Awareness should be given about bio-fertilizers and bio-control agent application along with organic farming practices in farmers' field.

NRM 8

i	Name of the Applicant	Bihar Agricultural University, Sabour, Bhagalpur
ii	Title	National Conference on Climate Change and Agricultural Production (CCAP)- Adapting Crops to Climate Variability and Uncertainty
iii	Venue and Date(s)	6-8 April, 2017 at Bihar Agricultural University, Sabour
iv	Amount of grant by ICAR	Rs. 2.00 Lakhs
v	ICAR's Sanction no.	F.No.23(71)/2016-Cdn(Tech)
vi	Recommendation:	
	<ul style="list-style-type: none"> ◆ There is a need to prepare computer simulation models of different weather probabilities and develop and promote farming system approaches which can help to minimize the adverse impact of unfavorable weather, while maximizing the benefits of a good monsoon. ◆ To monitor changes in pest and disease profiles and predict new pest and disease outbreaks, an early warning system should be put in place. The overall pest control strategy should be based on Integrated Pest Management for controlling the multiple pests in a given climatic scenario. ◆ Public awareness and capacity building of stakeholders on climate change will aid in effective implementation of the policies and respond effectively to the threats or opportunities posed by climate change. 	

NRM 9

i	Name of the Applicant	Indian Society of Soil Biology and Ecology, Dept. of Agricultural Entomology, UAS, GKVK, Bangalore
ii	Title	XIth National Symposium on Soil Biology and Ecology- Soil Biota and social insects for sustainable Organic Farming
iii	Venue and Date(s)	19-21 December 2016 at Dept. of Agricultural Entomology, UAS, GKVK, Bangalore
iv	Amount of grant by ICAR	Rs. 3.00 Lakhs
v	ICAR's Sanction no.	F.No.23(82)/2016-Cdn(Tech)
vi	Recommendation:	
	<ul style="list-style-type: none"> ◆ On-farm trials and demonstration should be taken up to provide awareness among farmers regarding use of bio-technology tools for the benefit of farmers. 	

NRM 10

i	Name of the Applicant	Indian Association of Soil and Water Conservationists, ICAR-IISWC, Kaulagarh Road, Dehradun
ii	Title	National Conference on Farmers First for conserving Soil and Water Resources in North Eastern Region
iii	Venue and Date(s)	9-11 February 2017 at AAU Campus, Khanpara, Guwahati, Assam
iv	Amount of grant by ICAR	Rs. 3.50 Lakhs
v	ICAR's Sanction no.	F.No.23(87)/2016-Cdn(Tech)
vi	Recommendations:	<ul style="list-style-type: none"> ◆ Potential ITKs on natural resource conservation and integrated farming system should be upgraded to modern technical knowledge (MTK) for their wider adaptation by the primary stakeholders. This should find priority in research agenda of the concerned institutions/ organizations. ◆ In view of the immense potential of entire NER to convert the existing conventional agriculture to organic, suitable policy and infrastructure support is recommended.

NRM 11

i	Name of the Applicant	Cooch Behar Association for Cultivation of Agricultural Sciences (COBACAS), Uttar Banga Krishi Viswavidyalaya, West Bengal
ii	Title	National Conference on Enhancing Nutritional Security through Climate Smart Farming Practices
iii	Venue and Date(s)	17-18 March, 2016 at Regional Research Station, Uttar Banga Krishi Viswavidyalaya, Kalimpong, Darjeeling, West Bengal
iv	Amount of grant by ICAR	Rs. 2.00 Lakh
v	ICAR's Sanction no.	F.No.23(112)/2016-Cdn.(Tech.)
vi	Recommendation:	<ul style="list-style-type: none"> ◆ Diversified cropping systems alternating with legumes or pulses should be followed. ◆ Development of suitable region specific agro-forestry systems is needed. ◆ Crop residue management should be done through composting, energy production or by developing alternate uses.

NRM 12

i	Name of the Applicant	National Council for Climate Change, Sustainable Development and Public Leadership (NCCSD), Ahmedabad
ii	Title	National Seminar on Sustainable food value chain in arena of Climate change
iii	Venue and Date(s)	15 th June, 2017 at Ahmedabad, Gujarat
iv	Amount of grant by ICAR	Rs. 2.00 Lakh
v	ICAR's Sanction no.	F. F.No.23(116)/2016-Cdn(Tech)
vi	Recommendation: <ul style="list-style-type: none"> ◆ It is required to create a direct linkage between producer and consumer, so that the benefit can reach to real stakeholders. The Krishi Mahotsav model of the state should be followed. ◆ Training and capacity building in value chain, credit and marketing and technology back up should be provided to farmers. 	

NRM 13

i	Name of the Applicant	School of Environment and Natural Resources, Doon University, Dehradun
ii	Title	Inner and Outer Climate and the Quest for environmental sustainability
iii	Venue and Date(s)	24-25 March, 2017 at Doon University, Dehradun
iv	Amount of grant by ICAR	Rs.1.00 Lakh
v	ICAR's Sanction no.	F.No.23(117)/2016-Cdn(Tech)
vi	Recommendation: <ul style="list-style-type: none"> ◆ Research in environmental ethics and traditional knowledge system should be encouraged in the universities and other academic institutions. 	

NRM 14

i	Name of the Applicant	Indian Society for Bio-control Advancement, ICAR-NBAIR, Bangalore
ii	Title	5 th National Conference on Biological Control: Integrating Recent Advances in Pest and Disease Management

iii	Venue and Date(s)	9-11 February, 2017 at KVIC Auditorium, Hebbel, Bangalore
iv	Amount of grant by ICAR	Rs. 2.50 Lakh
v	ICAR's Sanction F. No. and Date	F.No.23(119)/2016-Cdn.(Tech.)
vi	Recommendation: <ul style="list-style-type: none"> ◆ Genomic information should be fully exploited to empower biological control agents. There is a need for more intensive studies on functional genomics to exploit relevant genes. ◆ The weed biomass may be converted into compost for recycling. ◆ Pheromones are naturally occurring chemicals and hence they should not be treated as chemical pesticides and the pesticide law should not be applicable while applying for permit for their import. ◆ As NBA cannot make amendments in their regulations and hence insects cannot be treated differently from other organisms, an exemption for exchange of dead insect specimens for research purposes may be considered by NBA. ◆ Procedures for registration of bio-pesticides should be less stringent in comparison to chemical insecticides. 	

NRM 15

i	Name of the Applicant	Mahima Research Foundation and Social Welfare
ii	Title	International Conference on Statistics and Big Data Bioinformatics in Agricultural Research
iii	Venue and Date(s)	21-23 November, 2016 at ICRISAT, Patancheru, Hyderabad
iv	Amount of grant by ICAR	Rs. 3.00 Lakhs
v	ICAR's Sanction F. No. and Date	F.No.24(10)/2016 Cdn.(Tech.)
vi	Recommendation: <ul style="list-style-type: none"> ◆ Yield and water productivity can be enhanced by adopting better soil moisture conservation practices and better management, as well as by increasing provision of other factor inputs (NPK fertilizer, weed and pest control). ◆ The large area of salt-affected soils that are still lying barren should be targeted for more specific efforts for reclamation of soils or best land use contributing towards mitigating the impact of climate change. 	

NRM 16

i	Name of the Applicant	Anand Agricultural University, Anand
ii	Title	International Conference on Food, Water and Energy Nexus in Arena of Climate Change
iii	Venue and Date(s)	14-16 October 2016 at Anand Agricultural University, Anand
iv	Amount of grant by ICAR	Rs. 3.00 Lakhs
v	ICAR's Sanction no.	F.No.24(13)/2016 Cdn. (Tech)
vi	Recommendation:	
	<ul style="list-style-type: none"> ◆ More use of solar energy source for water pumping and mechanical farming activities at village level needs to be promoted. ◆ Adequate monitoring system should be put in place for long term sustainability of back water tourism. ◆ SRI method in rice farming should be followed for water saving with application of press mud of poultry manure enriched with effective microorganisms for better growth and stress tolerance compared to chemical fertilizers. ◆ Urgent need to address the remedial efforts for salinity increase in coastal area due to over pumping of ground water showing high sodium and magnesium levels in water. 	

NRM 17

i	Name of the Applicant	Soil Conservation Society of India, NASC Complex, New Delhi
ii	Title	National Conference on Natural Resource Management for Climate Smart Sustainable Agriculture
iii	Venue and Date(s)	11-13 September, 2017 at College of PG Studies, (CAU), Imphal
iv	Amount of grant by ICAR	Rs. 2.50 Lakh
v	ICAR's Sanction no.	F.No.23(13)/2017-Cdn.(Tech.)
vi	Recommendation:	
	<ul style="list-style-type: none"> ◆ Potential of mycorrhizal fungi for soil carbon sequestration under different land uses need to be explored. ◆ Bio-remediation through efficient microbes should be explored to mitigate salt stress. ◆ Soil and water conservation approaches should be followed to solve the problems related to shifting cultivation. 	

NRM 18

i	Name of the Applicant	Indian Society of Soil Science, NASC Complex, New Delhi
ii	Title	National Symposium on Soil and Water Management Innovations towards Doubling the Farmers' Income
iii	Venue and Date(s)	11-14 December 2017 at Amity University, Kolkata, West Bengal
iv	Amount of grant by ICAR	Rs. 5.00 Lakh
v	ICAR's Sanction F. No. and Date	F.No.23(19)/2017-Cdn.(Tech.)
vi	Recommendations:	<ul style="list-style-type: none"> ◆ <i>In situ</i> conversation by means of land configuration to improve farm productivity and farmers' income in arid semi-arid rain fed area needs to be taken up ◆ Refinement and implementation of STCR based Site Specific Nutrient Management for dryland/rainfed crops, medicinal, aromatic and horticultural crops should be taken up.

NRM 19

i	Name of the Applicant	LIGHTS, Vasant Kunj, New Delhi
ii	Title	National Conference on Science and Geopolitics of Himalaya, Arctic & Antarctic, (SAGHA 2017) focusing Climate Change
iii	Venue and Date(s)	30 Novemer-1 st December 2017 at JNU Convention Centre, Jawaharlal Nehru University, New Delhi
iv	Amount of grant by ICAR	Rs. 2.00 Lakh
v	ICAR's Sanction no.	F.No.23(54)/2017-Cdn.(Tech.)

vi	<p>Recommendation:</p> <ul style="list-style-type: none"> ◆ Due to the variation in methodologies, the results of glacier monitoring by different organizations produce different results. Therefore, there is a need to evolve an SOP (Standard Operating Procedure) keeping in mind the field monitoring systems of dynamics of glaciers. ◆ India should safeguard its scientific and other interests in Arctic Region by actively participating in different Working Groups of Arctic Council and International Arctic Science Committee. ◆ Capacity building and outreach in the field of glaciology and geopolitics of Polar Regions should be encouraged as is done in the field of atmospheric (IIT, New Delhi) and ocean science (IIT, Chennai). Young researchers may be encouraged to take up challenges in these upcoming areas. ◆ A “Himalayan Council” on the steps of Arctic Council needs to be constituted with an active involvement of all stakeholders.
-----------	---

NRM 20

i	Name of the Applicant	Department of Geography and Resource Management, School of Earth Science, Mizoram University (Central University), Mizoram
ii	Title	International Conference on Natural Resource Management for sustainable Development and Rural Livelihood
iii	Venue and Date(s)	26-28 October, 2017 at Mizoram University (Central), Aizwal
iv	Amount of grant by ICAR	Rs. 1.00 Lakh
v	ICAR's Sanction no.	F.No.24(3)/2017-Cdn.(Tech.)
vi	<p>Recommendation:</p> <ul style="list-style-type: none"> ◆ As community participation is the key to use and manage local resources for sustaining livelihoods, therefore, training programmes on innovations and technology use should be imparted to the users at community levels. 	

NRM 21

i	Name of the Society:	Indian Society of Soil Science
ii	Title:	Challenges and Opportunities in Rainfed Agriculture under Changing Climate Scenario.
iii	Venue and Date(s):	Anand Agriculture University, Anand 27-30 November, 2018
iv	Amount of grant by ICAR	Rs.5.00 Lakhs
v	ICAR's Sanction no.	F.No.23(30)/2018-Cdn.(Tech.)
vi	Recommendation:	<ul style="list-style-type: none"> ◆ There is a need to adjust crop calendars, sowing and harvesting time in view of the changes in rainfall patterns. ◆ Appropriately designed insurance products that help smoothen income and consumption patterns during a weather-shock is the need of the hour.

NRM 22

i	Name of the Society:	Indian Society of Agronomy
ii	Title:	XXI Biennial National Symposium on Doubling Farmers Income Through Agronomic Interventions Under changing Scenario
iii	Venue and Date(s):	Rajasthan College of Agriculture, MPUA&T , Udaipur Rajasthan. 24-26 October, 2018
iv	Amount of grant by ICAR	Rs. 5.0 Lakhs
v	ICAR's Sanction no.	F.No.23 (12)/2018-Cdn. (Tech.)
vi	Recommendations:	<ul style="list-style-type: none"> ◆ Low-cost technologies such as seed/seedlings treatment with fungicide/insecticides or Trichoderma for pest management, bio-fertilizers for nutrient saving and seed priming for better crop stand under stress conditions should be promoted for enhancing profitability of small-holders. ◆ A referral laboratory on organic farming should be established in the country at state level.

NRM 23

i	Name of the Society:	Association of Agro-meteorologists
ii	Title:	“Advances in Agro-meteorology for Managing Climate Risk of Farmers” (INAGMET- 2019)
iii	Venue and Date(s):	JNU, New Delhi, 11-13 February, 2019
iv	Amount of grant by ICAR	Rs. 6.00 Lakh
v	ICAR's Sanction no.	F. No. 24 (9)/2018-Cdn (Tech)
vi	Recommendations:	<ul style="list-style-type: none"> ◆ Climate Change Cell should initiate to enhance agro met activities like awareness of farming community on weather and climate induced risk in agriculture to help informed decision making. ◆ Development of pests and diseases monitoring system at national/regional level using weather model, information technology and geospatial technology. ◆ Green House gas monitoring network be established for different cropping systems.

NRM 24

i	Name of the Society:	Gramin Vikash Kendra Lalit Bhawan, Qumruddin Ganj, Biharsharif, Nalanda- 803101 (Bihar)
ii	Title:	Economic Development Through Integrated Farming System a Tool for Livelihood Development
iii	Venue and Date(s):	ICAR- Complex for Eastern Region, Plandu, Ranchi, Jharkhand, - 07-02-2019 to 08-02-19
iv	Amount of grant by ICAR	Rs. 1.0Lakh
v	ICAR's Sanction no.	F.No.23 (15)/2018-Cdn. (Tech.)
vi	Recommendation:	<ul style="list-style-type: none"> ◆ Intensive training facilities need to be provided in post-harvest management, fruit & vegetables processing, quality control measures, cold storage in rural area.

NRM 25

i	Name of the Society:	Soil Conservation Society of India
ii	Title:	Farmers' friendly Soil and Water Conservation Technologies for Mitigating Climate Change Impact
iii	Venue and Date(s):	Hotel Gem Park, Udhagamandalam, Tamil Nadu
iv	Amount of grant by ICAR	Rs. 3.00 Lakhs
v	ICAR's Sanction no.	F.No.23 (66)/2018-Cdn. (Tech.)
vi	Recommendations:	
	<ul style="list-style-type: none"> ◆ Development of short duration cum drought tolerance plant varieties for mitigating frequent dry spells and enhancing farm productivity ◆ Plantation of Mangroves should be done along the coastal region for reduced damages of Tsunami. ◆ By incorporating various state and central government agencies at each state land slide vulnerable district should be identified. 	

NRM 26

i	Name of the Society:	Poornima University
ii	Title:	Emerging trends in Water Quantity and Quality management
iii	Venue and Date(s):	Poornima University, 15-16 February, 2019
iv	Amount of grant by ICAR	Rs. 1.00 Lakhs
v	ICAR's Sanction no.	F. No.23 (75)/2018-Cdn. (Tech.)
vi	Recommendations:	
	<ul style="list-style-type: none"> ◆ Promoting the concept of water harvesting in all forms, with appropriate techniques should be given due importance. ◆ Development and testing of new concepts, technologies and management structures for water and waste water is required. 	

NRM 27

i	Name of the Society:	Indian Society of Coastal Agricultural Research, CSSRI Regional Research Station, Canning Town, West Bengal
ii	Title:	12th National Symposium on Coastal Agriculture: Boosting Production Potential under Stressed Environment
iii	Venue and Date(s):	Dr. Balasaheb Sawant Krishi Vidyapeeth, Dapoli (Maharashtra), 28 September-01 October, 2018
iv	Amount of grant by ICAR	Rs. 5.10Lakhs
v	ICAR's Sanction no.	F.No.23 (39)/2018-Cdn (Tech)
vi	Recommendations:	<ul style="list-style-type: none"> ◆ In order to prioritize and target reclamation measures, use of emerging tools like high resolution and hyperspectral remote sensing should be used for rapid and accurate assessment. ◆ It is essential to revisit the critical level in relation to soil texture, content and nature of clay. ◆ It is recommended that programme to monitor water quality, environmental flows and sedimentation rates be established at identified critical locations in the estuaries. ◆ Hydro-salinity modelling in areas, where crop and brackish water aquaculture on large scale is being undertaken, should be initiated to study impact on cultivated lands. This will enable to evaluate the synergies and conflicts of crop and brackish water aquaculture to properly manage the costal zones. ◆ Due attention should be given for development of a spatial database on water resources availability, crop yield potential and yield gap in order to target location specific management decisions for improving water productivity. ◆ Integrated farming system approach involving promising germplasm from plant, animal and fish component is required to be adopted.



ANIMAL SCIENCE



AS 1

i	Name of the Applicant	Millennium India Education Foundation (MIEF), East of Kailash, New Delhi
ii	Title of the Seminar/symposium/conference	Observing “World Zoonosis Day-2016” Annual Conference on Scientific Awareness on Zoonosis Disease Control
iii	Venue and Date(s)	3 rd July 2016 at Indian Medical Association Conference Hall, IMA House, New Delhi
iv	Amount of grant by ICAR	Rs. 1.00 Lakh
v	ICAR's Sanction no.	F.No.23(9)/2016-Cdn.(Tech.)
vi	Recommendations:	<ul style="list-style-type: none"> ◆ A web portal on Zoonotic Diseases Updates needs to be started. ◆ Proper screening procedures for the detection of zoonotic diseases need to be practiced, particularly during festivals like Eid, Rath Yatra etc. ◆ IEC materials on common zoonotic diseases need to be developed and distributed among the medical practitioners. ◆ A subject on Zoonotic diseases or animal care needs to be introduced at school level so that children are educated. ◆ Vaccination programs for those zoonotic diseases for which vaccines are available, should be strictly implemented so that disease at primary hosts level is well controlled. ◆ To set up virus diagnostic labs in the cities so that disease diagnosis time is reduced.

AS 2

i	Name of the Applicant	National Academy of Veterinary Science(I), Rajendranagar, Izatnagar
ii	Title	National seminar on sustainable Livestock Development for Food and Nutritional Security
iii	Venue and Date(s)	22 October 2016 at Khalsa Veterinary College, Amritsar, Punjab
iv	Amount of grant by ICAR	Rs. 2.00 Lakh
v	ICAR's Sanction no.	F.No.23(22)/2016-Cdn.(Tech.)
vi	Recommendations:	<ul style="list-style-type: none"> ◆ Regular interaction between veterinary scientists, academicians and livestock owners on vital issues of livestock development and capacity building programmes is required ◆ Steps need to be taken to improve surveillance and control of livestock diseases especially transboundary and zoonotic diseases.

AS 3

i	Name of the Applicant	Indian Society for Veterinary Surgery, Dept. of Veterinary Surgery & Radiology, Hisar
ii	Title	National Symposium on Biomaterials and stem cells for tissue repair and regeneration in Veterinary Surgery
iii	Venue and Date(s)	4 December, 2016 at Madras Veterinary College, Tamil Nadu Veterinary and Animal Sciences University, Chennai, Tamil Nadu
iv	Amount of grant by ICAR	Rs. 2.00 Lakh
v	ICAR's Sanction no.	F.No.23(27)/2016-Cdn.(Tech.)
vi	Recommendations:	<ul style="list-style-type: none"> ◆ Modern veterinary practice demands provision of improved surgical techniques to animals which reduce turnaround time and get the animals back to peak production levels. ◆ Clinical trials need to be strengthened in translation of research findings in the field of stem cells and biomaterials as it provides a promising strategy for engineering tissues and cellular delivery.

AS 4

i	Name of the Applicant	Indian Society of Veterinary Pharmacology and Toxicology (ISVPT), Dept. Of Veterinary Pharmacology and Toxicology, College of Vety. Science and Animal Husbandry, AAU, Anand
ii	Title	XVI Annual Conference of Indian Society of Veterinary Pharmacology and Toxicology and National Symposium on Animal Health and production: Challenges and Opportunities for Veterinary Pharmacology and Toxicology
iii	Venue and Date(s)	23-25 November, 2016 at Dept. Of Veterinary Pharmacology and Toxicology, College of Vety. Science and Animal Husbandry, AAU, Anand
iv	Amount of grant by ICAR	Rs. 2.00 Lakhs
v	ICAR's Sanction no.	F.No.23(28)/2016-Cdn(Tech)

vi	<p>Recommendations:</p> <ul style="list-style-type: none"> ◆ Research on identification of biomarkers need to be promoted that will provide opportunity for the innovative drug discovery and diagnostics. ◆ Pharmacokinetic studies in target species should be conducted to measure drug concentration at specific sites. ◆ Pilot studies on application of Nutraceuticals in specific disease condition to be undertaken. ◆ A mission mode project may be taken-up for integration of Pharmacokinetic- phramcodynamic biomarkers of anti-microbial in the food producing animals to minimize level of drug residue and emergence of drug resistance.
-----------	--

AS 5

i	Name of the Applicant	Animal Nutrition Association, Division of Animal Nutrition, IVRI, Izatnagar
ii	Title	X Biennial Conference of Animal Nutrition Association on Newer Perspectives in Animal Nutrition Research for Augmenting Animal Productivity
iii	Venue and Date(s)	9-11 November 2016 at College of Veterinary Science, Sri Venkateswara Veterinary University, Tirupati
iv	Amount of grant by ICAR	Rs. 3.50 Lakhs
v	ICAR's Sanction no.	F.No.23(30)/2016-Cdn.(Tech.)
vi	<p>Recommendation:</p> <ul style="list-style-type: none"> ◆ Research in the area of nutrient gene interaction with multi-institutional networking involving nutritionists, geneticist and biotechnologist needs to be taken up in a network mode ◆ Research work on rumen microbes to explore the possibility of using the commercially viable probiotics needs to be carried out in collaborative mode. 	

AS 6

i	Name of the Applicant	College of Veterinary and Animal Sciences, GBPUAT, Pantnagar
ii	Title	National Congress on Canine Practice and National Symposium on Newer approaches in management of Canine health and rewarding clinical practice
iii	Venue and Date(s)	9-11 February, 2017 at College of Veterinary and Animal Sciences, GBPUAT, Pantnagar

iv	Amount of grant by ICAR	Rs. 2.00 Lakhs
v	ICAR's Sanction no.	F.No.23(47)/2016-Cdn.(Tech.)
vi	Recommendations:	
	<ul style="list-style-type: none"> ◆ Workshops on ultrasonography should be organized at college level to train students, field veterinarians' and private practitioners. This program should be included in canine veterinary extension programme. ◆ Neonatal care of puppies, andrology and artificial insemination requires more emphasis in undergraduate syllabus and the awareness programs should be conducted for the benefit of practitioners. ◆ ISACP should take initiative to develop nutrient specifications for normal canine food of pets (Dogs and Cats) and it should also be covered in forthcoming conferences. ◆ Interaction between Clinical Departments and Department of Animal Nutrition should be promoted in all veterinary colleges and practitioners should update their knowledge in application of nutrition in clinical management of diseases. 	

AS 7

i	Name of the Applicant	Nagpur Veterinary College, Maharashtra Animal & Fishery Science University, Nagpur
ii	Title	National Symposium on Challenges in Animal Health for Higher Productivity and Income to Farmers and 30th Annual Convention of Indian Association of Veterinary Microbiologists, Immunologists and Specialists in Infectious Diseases
iii	Venue and Date(s)	10-12 February, 2017 at Nagpur Veterinary College, Nagpur
iv	Amount of grant by ICAR	Rs. 2.50 Lakh
v	ICAR's Sanction no.	F.No.23(101)/2016-Cdn.(Tech.)
vi	Recommendations:	
	<ul style="list-style-type: none"> ◆ Research focus should be to decipher host-pathogen interaction by elucidating the basic biology of pathogens as well as host with transcriptome analysis, miRNA research etc. to aim to control the disease by identification of newer targets & vaccine strategies. ◆ The success stories created by states like Chhattisgarh and Andhra Pradesh for PPR control need to be popularized by other states for carrying effective disease control which will aid in increasing the income of farmers. ◆ National Network Programme to study the production losses, national prevalence and molecular epidemiology of disease in domestic livestock must be carried out with aim to strengthen the activity to double the income of farmers by 2022. 	

AS 8

i	Name of the Applicant	ICAR-National Institute of Animal Nutrition and Physiology, Adugodi, Bengaluru
ii	Title	XXIV Annual Conference of Indian Poultry Science Association: Innovations for Safe and sustainable Poultry Production (IPSACON 2017)
iii	Venue and Date(s)	28-30 November, 2017 at NIMHANS Convention Centre, Bengaluru
iv	Amount of grant by ICAR	Rs. 3.00 Lakh
v	ICAR's Sanction no.	F.F.No.23 (33)/2017-Cdn. (Tech.).
vi	Recommendations:	<ul style="list-style-type: none"> ◆ Framing of strategies to scale up diversified poultry species on economically viable mode to sustain livelihood of small and marginal farmers and providing diversified taste to the consumers. ◆ There should be more focus on education, extension and awareness campaign targeting stakeholders in poultry production.

AS 9

i	Name of the Applicant	College of Veterinary Science and Animal Husbandry, OUAT, Bhubaneswar
ii	Title	National Seminar on Animal Health Service Delivery-The Priorities of the Professionals for Enhancing Farmers Income
iii	Venue and Date(s)	1-3 February 2018 at College of Veterinary Science and Animal Husbandry, OUAT, Bhubaneswar
iv	Amount of grant by ICAR	Rs. 2.50 Lakh
v	ICAR's Sanction F. No. and Date	F.No.23(43)/2017-Cdn.(Tech.)
vi	Recommendations:	<ul style="list-style-type: none"> ◆ Mineral deficiency affecting the production and reproduction of the farm animals need to be addressed by updating the work on area specific mineral mixture. ◆ The “pen side field test” may be developed for diagnosis of rabies in dogs in order to take necessary management measures. ◆ Necessary policy decisions be made by Government to ensure the availability of antibiotics and other drugs strictly against the prescription of qualified registered veterinarian in order to check the abuse of antibiotics. ◆ Effort must be made to develop non chemical acaricidals to manage canine demodocosis such as herbal remedies to control chemical toxicity and environmental residual effect.

AS 10

i	Name of the Applicant	Indian Association of Veterinary Microbiologists, Immunologists' and Specialists in Infectious Diseases, Division of Biological Standardization, ICAR-Indian Veterinary Research Institute, Izatnagar.
ii	Title	XXXI Annual Convention of Indian Association of Veterinary Microbiologists, Immunologists and Specialists in infectious disease (IAVM) on Innovations in Animal Health-current challenges and future prospective
iii	Venue and Date(s)	29-31 January, 2018
iv	Amount of grant by ICAR	Rs. 2.00 Lakh
v	ICAR's Sanction no.	F.F.No.23 (47)/2017-Cdn. (Tech.)
vi	Recommendations:	<ul style="list-style-type: none"> ◆ There is need for segregation of antibiotics that are to be targeted for use in animals and humans. Attempts should be made to develop alternatives to antibiotics for use in food animals. ◆ There is an urgent need to explore the possibility of harmonization and commercialization of disease diagnostic techniques developed by various laboratories in the country.

AS 11

i	Name of the Applicant	Indian Dairy Association, R.K. Puram, New Delhi
ii	Title	46 th Dairy Industry Conference (DIC)-Dairy Sufficiency to Efficiency
iii	Venue and Date(s)	8-10 February 2018 at Kochi (Kerala)
iv	Amount of grant by ICAR	Rs. 2.50 Lakh
v	ICAR's Sanction no.	F.No.23(50)/2017-Cdn.(Tech.)

vi	<p>Recommendations:</p> <ul style="list-style-type: none"> ◆ Farmers should be paid for their milk on the basis of its hygienic qualities in addition to present norms being followed. ◆ An on- line platform should be created for storing data related to livestock using block chain technology, on pay-and-use basis by farmers using smart phones. ◆ For faster multiplication of superior germplasm, there is an ardent need to implement Multiple Ovulation and Embryo transfer and <i>in vitro</i> Embryo Production using sexed semen. Continuous financial support and skill development is necessary for successful implementation of these technologies to yield desired results. ◆ Skill building in dairying should be taken up through combining vocational and entrepreneurship training to facilitate the formalization of small enterprises.
-----------	---

AS 12

i	Name of the Applicant	Society of Animal Physiologists of India (SAPI), Department of Veterinary Physiology and Biochemistry, Veterinary College, KVAFSU, Nandinagar, Bidar
ii	Title	XXVI Annual Conference of Society of Animal Physiologists of India (SAPI) and National Symposium on Physiological Innovations to Forecast the Impact of Climate Change and to Evolve Strategies for Sustainable Livestock Production
iii	Venue and Date(s)	21-22 December 2017 at Department of Veterinary Physiology and Biochemistry, Veterinary College, KVAFSU, Nandinagar, Bidar
iv	Amount of grant by ICAR	Rs. 1.50 Lakh
v	ICAR's Sanction no.	F. No. 23(56)/2017-Cdn.(Tech.)
vi	<p>Recommendations:</p> <ul style="list-style-type: none"> ◆ Emphasis should be given on 'genomics', 'proteomics' and "metabolomics" studies to forecast the impact of climate change on livestock and the development of proactive adaption strategies that can improve the resilience of livestock productivity to climate change. ◆ The inter-department and inter-institutional collaborations between animal physiologists and meat scientists are required to solve many problems of meat industry to produce quality meat. 	

AS 13

i	Name of the Applicant	Department of Veterinary Parasitology, College of Veterinary and Animal Science, Navania, Villabh Nagar, Udaipur
ii	Title	National Conference on Technologies for sustainable parasite control and redressal of detection methods directed for upliftment of rural economy
iii	Venue and Date(s)	12-14 February 2018 at Rajasthan College of Agriculture, MPUAT, Udaipur
iv	Amount of grant by ICAR	Rs. 2.00 Lakh
v	ICAR's Sanction no.	F.No.23(57)/2017-Cdn.(Tech.)
vi	Recommendations: <ul style="list-style-type: none"> ♦ A referral laboratory in each state should be established for diagnosis/control of haemoprotozoan diseases. ♦ The link between human, domestic animal and wildlife health and the threat of disease transmission to people should be documented. 	

AS 14

i	Name of the Applicant	Indian Virological society, NASC Complex, New Delhi
ii	Title	National Conference on VIRCON 2017 Viruses to viromes in health and diseases
iii	Venue and Date(s)	7-9 December 2017
iv	Amount of grant by ICAR	Rs. 2.50 Lakh
v	ICAR's Sanction no.	23(58)/2017-Cdn.(Tech.)
vi	Recommendations: <ul style="list-style-type: none"> ♦ Emerging and re-emerging virus of human beings like Zita and Ebola and their epidemiological significance needs attention 	

AS 15

i	Name of the Applicant	Society for Conservation of Domestic Animal Biodiversity (SOCDAB), NBAGR, Karnal
ii	Title	National Conference on Sustainable Management of Livestock and Poultry Diversity for Enhancing the Farmers Income
iii	Venue and Date(s)	8-10 February 2018 at Rajasthan University of Veterinary & Animal Science, Bikaner (Rajasthan)
iv	Amount of grant by ICAR	Rs. 2.50 Lakh
v	ICAR's Sanction no.	F.F.No.23(63)/2017-Cdn.(Tech.)
vi	Recommendation:	<ul style="list-style-type: none"> ◆ Minimum Support Price (MSP) for animal produce based on the production cost, ensuring at least 50% profit on investment. ◆ Geographical Tagging of the Unique Livestock Products of indigenous livestock like Kadaknath for meat; A1/A2 milk, Desi Ghee, Garole and Kendrapada sheep for FecB gene, Carpet Wool of Chokla sheep, Lustrous wool of Magra sheep, Hallikar and Nagouri cattle for draft purpose, Murrah and Bhadawari buffalo, black Bengal and Jamunapari goat, Mraewari Horses, Yak and Mithun etc. is essential. ◆ Proper attention should be given to marketing of Camel Milk, Sheep Milk, Goat Milk and its uses in therapeutic purposes. ◆ Approval from FSSAI should be obtained for sale of different animal products for human consumption, certification for A2 milk, fortified milk, products from disease free animals etc.

AS 16

i	Name of the Applicant	NTR College of Veterinary Science, Sri Venkateswara Veterinary University, Gannavaram
ii	Title	International Congress on Canine Practice and Symposium on Emerging Issues, Innovative Techniques and Comprehensive Overview of Research Development in Canine Practices
iii	Venue and Date(s)	7-9 February 2018 at NTR College of Veterinary Science, Gannavaram
iv	Amount of grant by ICAR	Rs. 2.00 Lakh
v	ICAR's Sanction no.	24(15)/2017-Cdn.(Tech.)

vi	Recommendations: <ul style="list-style-type: none"> ◆ District Veterinary hospitals should be equipped with 3D Ultrasonography and the workshop on use of Ultrasonography (3 D and 4 D) should be conducted at the college level. ◆ ISACP should take initiative on development of immunization and deworming schedule and also to create provision to permit clinicians to import only required vaccines with a ceiling as is permitted for the Medical Practitioners.
-----------	--

AS 17

i	Name of the Society:	National Academy of Veterinary Science (India)
ii	Title:	“Livestock Sector towards One Health, Food Security and Safety”
iii	Venue and Date(s):	College of Veterinary Sc. and Animal Husbandry, OUAT, Bhubaneswar during December 19-20, 2018
iv	Amount of grant by ICAR	Rs. 3.0 Lakh
v	ICAR's Sanction no.	F.No.23 (11)/2018-Cdn. (Tech.)
vi	Recommendations: <ul style="list-style-type: none"> ◆ Molecular and immunological based diagnosis of Cryptosporidium and infectious disease both in animal and human across the world, is essential for accurate and early detection of different pathogenic species. ◆ Sperm mediated gene transfer (SMGT)/ Testis mediated gene transfer (TGMT, considered efficient method for modifying genome of animals through introduction of foreign DNA into testicular germs cells to produce transgenic sperm cell needs further research ◆ Genome recoding can be exploited to customize pathogenicity to a level appropriate for the use as vaccine. ◆ Milk can be used to exploit mega body harvest, a novel antibody based therapeutics and vaccines for pharmaceutical applications. ◆ Need to establish wildlife disease investigation cell at national and state level for protection of all susceptible hosts against emerging diseases. 	

AS 18

i	Name of the Society:	Indian Dairy Engineers Association
ii	Title:	“Dairy Process Engineering From farm to Table”
iii	Venue and Date(s):	Labh Ganga Convention Centre, Bhopal Bypass, Indore, Madhya Pradesh
iv	Amount of grant by ICAR	Rs.2.00 Lakh
v	ICAR's Sanction no.	F.No.23 (55)/2018-Cdn. (Tech.)
vi	Recommendations:	<ul style="list-style-type: none"> ◆ Mechanism should be devised to grade the dairy industry on the basis of application of good manufacturing practices, incorporation of energy efficiency and increase in productivity, waste management and optimum utilization of resources. ◆ Technical institutions should produce quality dairy engineers who can undertake the responsibilities for planning and maintenance of the dairy processing units.

AS 19

i	Name of the Society:	Indian Association of Veterinary Anatomists
ii	Title:	“Support Development of Professional Skills in Doubling Farmer’s Income”
iii	Venue and Date(s):	College of Veterinary Sciences and Animal Husbandry, Aizawl, Mizoram. 28-30 Nov, 2018
iv	Amount of grant by ICAR	Rs. 2.50 Lakh
v	ICAR's Sanction no.	F.No.23 (79)/2018-Cdn. (Tech.)
vi	Recommendation:	<ul style="list-style-type: none"> ◆ There is a need to have dedicated hours of the course curriculum to incorporate basic clinical skills integrating radiographic anatomy.

AS 20

i	Name of the Society:	ICAR-Indian Grassland and Fodder Research Institute, Jhansi, U.P.
ii	Title:	Forage and livestock based technological innovations for doubling farmers' income
iii	Venue and Date(s):	UAS, Dharwad, Karnataka 13.12.2018 to 14.12.2018
iv	Amount of grant by ICAR	Rs. 2.0 Lakhs
v	ICAR's Sanction F. No. and Date	F.No.23 (21)/2018-Cdn. (Tech.)
vi	Recommendations:	<ul style="list-style-type: none"> ◆ Crop specific modules for organic farming to be developed incorporating the beneficial PGPR component and should be taken up on total village. PGPR efficacy as energy saving product to be demonstrated in the farmer's holdings. ◆ Efficacy and role of PGPR's and related products to be conducted in and the effective products to be provided (if it does not involve CIB registration) to the farmers at a reasonable cost.

AS 21

i	Name of the Society:	Commonwealth Veterinary Association
ii	Title:	7th Pan Commonwealth veterinary
iii	Venue and Date(s):	ICAR-NIANP, Audgodi, Bangalore 3rd to 7th March
iv	Amount of grant by ICAR	Rs. 3.75 Lakhs
v	ICAR's Sanction no.	F.No.24 (13)/2018-Cdn. (Tech.)
vi	Recommendations:	<ul style="list-style-type: none"> ◆ Harmonizing veterinary education in Commonwealth countries with minimum requirements towards international accreditation. ◆ Revolutionary approaches via new agricultural systems and reengineered foods are necessary to ensure food is delivered to those who need it the most. ◆ Current practice on "factory farming" or intensive livestock systems should be reviewed to ensure the practice provides more advantages than the disadvantages. Establishment of strong networking and collaboration among commonwealth countries.

AS 22

i	Name of the Society:	Indian Society of Veterinary Pharmacology and Toxicology
ii	Title:	XVIII Annual conference of Indian Society of Veterinary Pharmacology and Toxicology (ISVPT) and national symposia on “one health: Veterinary Pharmacology and Toxicology approaches.
iii	Venue and Date(s):	College of Veterinary Science and Animal Husbandry, Anand Agricultural University Anand-388001 Gujarat, 5-7 December, 2018
iv	Amount of grant by ICAR	Rs. 3.00 Lakhs
v	ICAR's Sanction no.	F.No.23 (56)/2018-Cdn. (Tech.)
vi	Recommendations:	<ul style="list-style-type: none"> ◆ Intensive research on identification of biomarkers for bovine TB and its correlation with human-TB needs to be studied ◆ Pharmacokinetic studies of drug and xenobiotics in target animal species to measure drug concentration at specific sites and avoid occurrence of drug residues to be conducted.

AS 23

i	Name of the Society:	Indian Society for study of Animal Reproduction (ISSAR), Department of Veterinary Gynaecology and Obstetrics College of Veterinary Science and Animal Husbandry Anand Agricultural University, Anand-388001, Gujarat
ii	Title:	XXXIV Annual convention of the Indian Conference Society of Study of Animal Reproduction (ISSAR) and International Symposium on “Productivity Enhancement through Augmenting Reproductive Efficiency of livestock for Sustainable Rural Economy”
iii	Venue and Date(s):	College of Veterinary Science and Animal Husbandry, Anand Agricultural University Anand-388001 Gujarat, 28-30 December, 2018
iv	Amount of grant by ICAR	Rs. 3.0 Lakhs
v	ICAR's Sanction no.	F.No.24 (21)/2018-Cdn (Tech)

vi	Recommendations: <ul style="list-style-type: none"> ◆ Intensive use of Assisted Reproduction Technology with fix timed AI to improve reproductive efficiency of dairy animals, genetic upgradation of livestock and faster multiplication of elite germ plasm of the desired sex, should be propagated to enhance farmers' income. ◆ Development of technology for production of sex sorted semen for indigenous cattle and buffaloes may be given priority in ICAR/ GOI.
----	--

AS 24

i	Name of the Society:	College of Veterinary & Animal Sciences, G. B. Pant University of Agriculture & Technology, Pantnagar (Udham Singh Nagar) Uttarakhand
ii	Title:	XIII Biennial National conference of Associations of Public Health Veterinarians on The Role of Veterinary Public Health is improving Food Security and safety through one Health Approach
iii	Venue and Date(s):	College of Veterinary & Animal Sciences, Pantnagar November 30- 1 December, 2018
iv	Amount of grant by ICAR	Rs. 3.00Lakhs
v	ICAR's Sanction no.	F.No.23 (54)/2018-Cdn. (Tech.)
vi	Recommendations: <ul style="list-style-type: none"> ◆ Use of different formulations to reduce fat and enhance value and shelf-life of processed meat and meat products. For detection of falsification of meat and meat products, use of FINS is suggested. ◆ It is recommended that the leaf extract of plant Nyctanthes arbor-trusties Linn (NAE) could be used for the immunomodulatory herbal preparations in poultry. ◆ Safety of Nano particles for broad use should also be assessed. ◆ Exploring the status of heavy metals, pesticide residues and environmental pollutants in the lesser known but important water sources. 	

AS 25

i	Name of the Society:	Khalsa College of Veterinary & Animal Science, Amritsar, Punjab
ii	Title:	National Congress of Canine Practice and the Symposium of “Exploring New Horizons in canine Practice & Welfare”
iii	Venue and Date(s):	Khalsa College of Veterinary & Animal Sciences, Ram Tirath Road, Amritsar 26th to 28th February, 2019
iv	Amount of grant by ICAR	Rs. 2.00 Lakhs
v	ICAR's Sanction no.	F.No.23 (13)/2018-Cdn (Tech)
vi	Recommendation:	<ul style="list-style-type: none"> ◆ Research and Development should be oriented to develop diagnostic kits for veterinary purpose instead of depending on human diagnostic kits.



FISHERIES SCIENCE



FS 1

i	Name of the Applicant	Fisheries College and Research Institute, Tamil Nadu Fisheries University, Thoothukudi
ii	Title	Expert Consultation on Revitalizing Indian Fisheries Education-2016 (RIFE 2016)
iii	Venue and Date(s)	17-18 June, 2016 at Fisheries College and Research Institute, Tamil Nadu Fisheries University, Thoothukudi
iv	Amount of grant by ICAR	Rs. 2.50 lakhs
v	ICAR's Sanction no.	F.No.23(13)/2016-CdnTech
vi	Recommendations:	
	<ul style="list-style-type: none"> ◆ Fisheries colleges in land locked states should plan exchange programme with colleges in coastal areas so that the students will have proper exposure in courses and field realities related to marine sector. ◆ States in the process of starting new colleges have to ensure that the Lakra Committee recommendations on infrastructure and faculty requirements be fulfilled. ◆ Courses on physiology, pharmacology, therapeutics, drugs in aquaculture should be made mandatory in B.F.Sc, curriculum to empower fisheries graduates to help the industry tackle to growing disease problems in aquaculture and to act as certified aquaculture health professional. 	

FS 2

i	Name of the Applicant	Society of Fisheries Technologists, CIFT, Cochin,
ii	Title	National Seminar on Marine Seaweeds-A Source of Nutraceuticals, Healthcare Product and New Materials-Future Prospectives
iii	Venue and Date(s)	January-February, 2017 at ICAR-CIFT, Kochi, Kerala
iv	Amount of grant by ICAR	Rs. 3.00 Lakhs
v	ICAR's Sanction no.	F.No.23(31)/2016-Cdn. (Tech.)
vi	Recommendations:	
	<ul style="list-style-type: none"> ◆ Seaweed culture and its products have to be promoted and popularized. ◆ Income of self help groups engaged in seaweed culture and seaweed collection can be augmented through small scale industries for production of functional foods. 	

FS 3

i	Name of the Applicant	Society of Fisheries Technologists, CIFT, Cochin
ii	Title	National Seminar on Juvenile Fish Landings: Issues and Mitigation Measures
iii	Venue and Date(s)	25th March, 2017 at ICAR-CIFT, Cochin
iv	Amount of grant by ICAR	Rs. 2.00 Lakhs
v	ICAR's Sanction no.	F.No.23(32)/2016-Cdn(Tech)
vi	Recommendations:	<ul style="list-style-type: none"> ◆ Adoption and implementation of a regionally relevant and appropriate suite of management and technical measures are urgently needed to address the issue of juvenile fish landings. ◆ Standardization of fishing vessels and restrictions of their endurance and capacities would also be needed for reduction of fishing effort and hence by catch of juveniles. ◆ Delimitation of an appropriate proportion of the fishing ground as Marine Protected Area (MPA) is one the most effective measures to unequivocally prevent overfishing, shelter spawning biomass and protects the ecosystem services, on a long-term sustainable basis. ◆ Implementation of the Minimum Legal Size (MLS), based on scientific advice must be enforced towards disincentivising juvenile fish capture and landing. ◆ Area closures and temporal closures of fishing operations in affected areas and seasons, based on historical data on peak juvenile by catch abundance should be used fruitfully for juvenile by catch reduction. ◆ Juvenile mortality in shrimp fish trawl systems should be reduced by using specially designed BRDs for juvenile exclusion such as Juvenile Fish Excluder cum Shrimp Sorting Device (JFE-SSD) and Juvenile and Trash Excluder Device (JTED).

FS 4

i	Name of the Applicant	Swadeshi Science Movement, Kerala
ii	Title	26th Swadeshi Science Congress
iii	Venue and Date(s)	7-9 November, 2016 at Central Marine Fisheries Research Institute (CMFRI), Kochi, Kerala
iv	Amount of grant by ICAR	Rs. 2.00 Lakhs
v	ICAR's Sanction no.	F.No.23(64)/2016-Cdn(Tech)
vi	Recommendation:	<ul style="list-style-type: none"> ◆ New technologies to harvest untapped tuna and other deep sea fishes as well as preserving the catch without compromising the quality should be developed.

FS 5

i	Name of the Applicant	ICAR- Inland Fisheries Society of India (IFSI), Barrackpore, Kolkata
ii	Title	National Seminar on Priorities in Fisheries and Aquaculture
iii	Venue and Date(s)	11-12 March, 2017 at College of Fisheries, Orissa University of Agriculture and Technology, Rangeilunda, Berhampur, Odisha
iv	Amount of grant by ICAR	Rs. 2.00 Lakh
v	ICAR's Sanction no.	F.No.23(113)/2016-Cdn(Tech)
vi	Recommendations: <ul style="list-style-type: none"> ◆ Diversification of aquaculture practices with high value indigenous fish species and genetic improvement of cultured species is required for doubling the income of farmers. ◆ Cat fish culture with emphasis on Pabda (<i>Ompok bimaculatus</i>) and Magur (<i>Clarias batrachus</i>) and integrated farming system should be promoted in North Eastern States. ◆ Popularization and dissemination of cage culture technology should be taken up in reservoirs as a means of intensive fish production with emphasis on species diversification for sustainability and profitability. ◆ Exotic fishes like African catfish, big headcarp and tilapia should not be promoted for culture in enclosures in open waters. ◆ Prioritization of ecosystem based management model for reservoir and wetland fisheries development; bringing potential small reservoirs and wetlands under culture based fisheries regime for improving per unit water productivity is the need of the hour. ◆ Popularization of Biofloc based nursery rearing technology of Penaeid shrimps for better survival, growth performance, immunity and reduction of production cost is required. ◆ Promotion of Integrated Multi-Tropic Aquaculture (IMTA) as a viable option for climate smart aquaculture and development of resilient strains to combat climate change. 	

FS 6

i	Name of the Applicant	Society of Fisheries Technologists (India), Matsyapuri, Cochin
ii	Title	National Seminar on Quality and Trade issues of Aquaculture in India
iii	Venue and Date(s)	23-24 March 2018 at ICAR-Central Institute of Fisheries Technology, Visakhapatnam
iv	Amount of grant by ICAR	Rs. 2.00 Lakh
v	ICAR's Sanction no.	F.No.23(26)/2017-Cdn(Tech)
vi	Recommendations:	<ul style="list-style-type: none"> ◆ Relevant policy intervention is required to address the issues of over-capacity of fishing fleets, marine pollution etc. which are responsible for dwindling marine catches. ◆ Marine fishermen populations have to be made aware of availability of new technological advancements in fishing gears and vessel, diversification of targeted species and to catch high priced species in a sustainable manner to boost export. ◆ Mobile fish product vending carts and matsya mart has to be popularized for supplying quality fish and fish products to the consumers and also attract new fish consumers. ◆ It is very important to create infrastructure for maintaining cold chain facilities from catch to consumption, so that the harvested fish/shrimp meets the quality regulations laid by the national and international regulatory agencies. ◆ Establishment startups for high value products from fishes and utilization of fishery by-products for industrial/pharmaceutical applications will open new vistas for business opportunities in fisheries.

FS 7

i	Name of the Applicant	ICAR-Central Institute of Fisheries Technology, Matsyapuri, Kochi
ii	Title	11th Indian Fisheries and Aquaculture Forum on Fostering Innovations in Fisheries and Aquaculture: Focus on Sustainability and Safety
iii	Venue and Date(s)	21-24 November 2017 at ICAR-CIFT, Cochin
iv	Amount of grant by ICAR	Rs. 10.00 Lakh
v	ICAR's Sanction F. No. and Date	F. No. 24(1)/2017-Cdn(Tech)

vi	<p>Recommendations:</p> <ul style="list-style-type: none"> ◆ Deep sea fishing to be encouraged with scientific planning by taking into account suitable deep sea vessel designs, quality of catch, marketing and enforcement of laws. ◆ Strategies based remote sensing data on tuna fishing grounds should be popularized and disseminated to minimize searching time and fuel. ◆ In addition to focus on catastrophic diseases, other important limiting diseases like slow growth syndrome, fecal disease and Enter cytozoon Hepatopenaei (EHP) require attention. ◆ There is a need to put dedicated systems in place to ensure the quality and safety of the seafood for consumption.
-----------	---

FS 8

i	Name of the Society:	College of Fisheries, Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Shirgaon, Ratnagiri, Maharashtra
ii	Title:	“Challenges and opportunities for Sustainable Fisheries and Aquaculture Development” (COSFAD- 2019)
iii	Venue and Date(s):	College of Fisheries, Shirgaon, Ratnagiri Maharashtra 17-20 th January
iv	Amount of grant by ICAR	Rs. 3.50 Lakh
v	ICAR's Sanction no.	F.No.24 (12)/2018-Cdn. (Tech.)
vi	<p>Recommendations:</p> <ul style="list-style-type: none"> ◆ Ecosystem Based Fisheries Resource Management (EBFRM) with co-management and knowledge management as a part of major reform particularly in marine capture fisheries sector governance are vital for sustainable management. ◆ Fish transportation, processing and marketing constraints need to be addressed in the country. ◆ Environmental Impact Assessment (EIA) should be made mandatory for all inland cage culture operations for avoiding degradation of the inland (lacustrine) ecosystems. ◆ Marine fishery resources need to be certified under Marine Steward Council program for ensuring sustainability. ◆ A policy on decommissioned fishing vessels may be put in place so as to support the traditional fishers and to enhance the coastal tourism. ◆ There is need to formulate legal framework for conservation of Mahaseer and trout fish. ◆ To reduce GHG emission, integrated system viz. Aquaponics and IMTA have to be largely used in aquaculture sector. ◆ Hatchery accreditation and seas certification must be made mandatory through policies and guidelines. 	



AGRICULTURE EXTENSION



AEx 1

i	Name of the Applicant	Indian Society of Extension Education, Division of Agricultural Extension, IARI, New Delhi.
ii	Title	National Seminar on information and communication management for climate smart agriculture for sustainable development
iii	Venue and Date(s)	5-7 December 2016 at NAAS Complex, New Delhi
iv	Amount of grant by ICAR	Rs. 2.00 Lakh
v	ICAR's Sanction no.	F.No.23(21)/2016-Cdn(Tech)
vi	Recommendations:	<ul style="list-style-type: none"> ◆ Transfer of agricultural technological options has to be resource based and region specific according to different agro-ecological areas. ◆ Production of seed, planting material and germplasm in case of field and horticultural crops, animals and fish must be commensurate both in terms of quantity and quality. ◆ Forecasting and predicting the technology demand using judgment methods like Delphi and scenario analysis which help to manage the technology generation and dissemination process must be up scaled.

AEx 2

i	Name of the Applicant	Asian Agri-History Foundation (AAHF)
ii	Title	National Symposium on “The Role of Vrikshayurveda in Organic Agriculture
iii	Venue and Date(s)	24-25 November, 2016 at Rajasthan College of Agriculture. MPUAT, Udaipur
iv	Amount of grant by ICAR	Rs. 2.00 Lakh
v	ICAR's Sanction no.	F.No.23(41)/2016-Cdn(Tech)
vi	Recommendations:	<ul style="list-style-type: none"> ◆ Validation of valuable ancient knowledge and wisdom of Vrikshayurveda in traditional agriculture with modern science-based technologies needs to be taken up for strengthening Sustainable Agriculture Practices (SAP). ◆ There is a scope for high value organic products which need to be popularized. ◆ Scholarships for traditional farming, traditional medicines, healthcare and nutritional security in each SAU should be provided.

AEx 3

i	Name of the Applicant	Society of Extension Education, Paschimpuri, Agra
ii	Title	National Extension Education Congress-2017 “Nutrition Sensitive Agriculture: Changing Role of Extension”
iii	Venue and Date(s)	28-31 January 2017 at ICAR-NAARM, Hyderabad
iv	Amount of grant by ICAR	Rs. 3.00 Lakhs
v	ICAR's Sanction no.	F.No.23(79)/2016-Cdn(Tech)
vi	Recommendation:	<ul style="list-style-type: none"> ♦ ICT based market-led supply-chain extension system, through which extension system will reach to the clientele on an end to end basis, beginning from ‘package of practices’ for production to selling of produce at the consumers’ doorstep must receive attention.

AEx 4

i	Name of the Applicant	Gramin Vikash Kendra, Lalit Bhawan, Qumruddin Ganj, Bihar Sharif, Nalanda (Bihar)
ii	Title	National seminar on promotion and popularization of Agriculture Bio Technological Intervention for Socio – Economic, Development of Rural Areas
iii	Venue and Date(s)	9-10 January, 2017 at Hotel Rajgir, Rajgir, Nalanda
iv	Amount of grant by ICAR	Rs. 1.50 Lakhs
v	ICAR's Sanction no.	F.No.23(80)/2016-Cdn(Tech)
vi	Recommendation:	<ul style="list-style-type: none"> ♦ Benefits of biotechnological interventions in enhancing agricultural productivity and quality must be popularized among the farmers and other stakeholders.

AEx 5

i	Name of the Applicant	Alumni Association, Chandra Shekhar Azad University of Agriculture and Technology, Kanpur
ii	Title	National Conference on Farmer’s Centric Agri-Innovation for Sustainable Development
iii	Venue and Date(s)	24-25 March, 2017 at C.S. Azad University of Agriculture and Technology, Kanpur.

iv	Amount of grant by ICAR	Rs. 2.00 Lakh
v	ICAR's Sanction no.	F.No.23(92)/2016-Cdn. (Tech.)
vi	Recommendations: <ul style="list-style-type: none"> ◆ Students should be involved under experiential learning in production and sale of agricultural products such as vermi-compost, fruits/vegetable juice, sauce, jam, ketchup, honey etc. through ATIC (Agriculture Technology Information Center). ◆ Alumni and industry interface with the university/colleges must be regularly planned to promote agri entrepreneurship. ◆ Capacity building of the farming community (farmers, farm women, and rural youth and extension personnel) in modern technologies and market linked value addition is required to augment farmers' income. 	

AEx 6

i	Name of the Applicant	Vidyarthi Kalyan Nyas, Bhopal.
ii	Title	National Seminar on Agriculture for Prosperity and Sustainable Development
iii	Venue and Date(s)	25-26 March, 2017 at IARI, Pusa, New Delhi
iv	Amount of grant by ICAR	Rs. 5.00 Lakhs
v	ICAR's Sanction no.	F.No.23(121)/2016-Cdn(Tech)
vi	Recommendation: <ul style="list-style-type: none"> ◆ Ecological agriculture in tune with sustainable development goals may be promoted among farmers as well as in school education. 	

AEx 7

i	Name of the Applicant	Society for Integrated Development of Agriculture, Veterinary and Ecological Sciences, SKUAST Jammu
ii	Title	National Conference on Innovative Technological Interventions for Doubling Farmers' Income (NaCITI-2018)
iii	Venue and Date(s)	8-10 February 2018 at SKUAST, Jammu Main Campus, Chatha
iv	Amount of grant by ICAR	Rs. 3.00 Lakh
v	ICAR's Sanction no.	F. No. 23(40)/2017-Cdn(Tech)

vi	<p>Recommendations:</p> <ul style="list-style-type: none"> ◆ Technological interventions for promotion of high density plantations (HDP) especially with respect to varieties, canopy management and nutrient management should be popularized. ◆ Fruit quality in horticulture crops is mostly climate related, hence classification into appropriate subzones for developing horticulture sector is important to get export quality produce for instance apple of Kashmir, walnut of Kishtwar, Rajmash of Bhaderwah and Basmati of Jammu in J&K. ◆ Integrated-entrepreneurship in mushroom cultivation, spawn production and value addition should be initiated. ◆ Quality planting material should be promoted taking advantage of recent development in protected structures and tissue culture techniques. ◆ Protection of eco-specific land races in the form of field gene bank and their use in development of climate resilient varieties should be initiated.
----	---

AEx 8

i	Name of the Applicant	Trust for Advancement of Agricultural Sciences, IARI, New Delhi
ii	Title	Regional Conference on Motivating and Attracting Youth in Agriculture
iii	Venue and Date(s)	15-16 June 2018 at NASC Complex, New Delhi
iv	Amount of grant by ICAR	Rs. 4.00 Lakh
v	ICAR's Sanction no.	F.F.No.23(67)/2017-Cdn(Tech)
vi	<p>Recommendation:</p> <ul style="list-style-type: none"> ◆ There is a need for creation of “Agri-youth innovation corpus fund” out of Corporate Social Responsibility (CSR) of agriculture-based industries to catalyze rural employment through special projects. 	

AEx 9

i	Name of the Applicant	Rural Economic and Educational Development Society (REEDS) Hyderabad
ii	Title	SKILLS 2017 International Conference: Life Skills and Livelihood Skills-Leveraging Digital India for Rural Empowerment
iii	Venue and Date(s)	16-17 November 2017 at Dr. MCR HRD Institute of Telangana, Hyderabad

iv	Amount of grant by ICAR	Rs. 3.00 Lakh
v	ICAR's Sanction no.	F.No.24(9)/2017-Cdn. (Tech.)
vi	Recommendation: <ul style="list-style-type: none"> ◆ Leverage the National Digital Literacy Mission Programme for enhancing the livelihood skills of rural communities by channelizing the resources of various Centers of Excellence (COEs). 	

AEx 10

i	Name of the Applicant	Orissa Society of Extension Education, OUAT, Bhubaneswar
ii	Title	International Extension Congress on New Horizons of Extension: Challenges and Opportunities
iii	Venue and Date(s)	1-3 February 2018 at Orissa University of Agriculture and Technology, (OUAT), Bhubaneswar
iv	Amount of grant by ICAR	Rs. 8.00 Lakh
v	ICAR's Sanction no.	F. No. 24(23)/2017-Cdn.(Tech.)
vi	Recommendations: <ul style="list-style-type: none"> ◆ Time gap between technology generation and dissemination must be abridged by exploiting modern digital platform and tools. ◆ Need to expand the scope and mandate of KVKs to focus on value chain, entrepreneurship, marketing and supply chain system. 	

AEx 11

i	Name of the Applicant	Savarmati Plantation Farmers; Society, Kalibari Khagaria (Bihar)
ii	Title	National Seminar on Development of Agriculture Based Improved Technologies
iii	Venue and Date(s)	3-5 November, 2017 at Saundic Bhawan, Khagaria
iv	Amount of grant by ICAR	Rs. 3.00 lakh
v	ICAR's Sanction no.	F.No.23(11)/2017-Cdn(Tech)
vi	Recommendation: <ul style="list-style-type: none"> ◆ Emphasis may be given to short duration and drought resistant varieties to provide income support to the farmers round the year. 	

AEx 12

i	Name of the Applicant	All India Agricultural Students Association, NASC Complex, New Delhi
ii	Title	3 rd National Youth Convention on Transforming Agriculture for Entrepreneurship and Employment Generation
iii	Venue and Date(s)	23-24 February 2019 at AAU at Assam Agricultural University- Jorhat
iv	Amount of grant by ICAR	Rs. 3.00 lakh
v	ICAR's Sanction no.	F.No.23(62)/2017-Cdn(Tech)
vi	Recommendations:	<ul style="list-style-type: none"> ◆ Funding may be increased for agriculture research, education and development so as to match with the agri output. ◆ Reforms are needed in the cooperative as well as marketing sector for agribusiness.

AEx 13

i	Name of the Society:	Retired ICAR Employees Association (RICAREA), Hyderabad
ii	Title:	“Sustainability of small farmers in the changing Agricultural Scenario”
iii	Venue and Date(s):	Hyderabad 22-12-2018
iv	Amount of grant by ICAR	Rs. 2.0 Lakh
v	ICAR's Sanction no.	F.No.23 (28)/2018-Cdn (Tech)
vi	Recommendations:	<ul style="list-style-type: none"> ◆ Credit facilities must be extended to small and marginal farmers to enable them to take up supplementary enterprises like dairying, small ruminant rearing, piggery, fish etc. from the state and central Governments. ◆ There should be a greater focus on community rain water harvesting and recycling research with more equitable distribution of water for protecting the interests of small and marginal farmers in a watershed framework. ◆ Practices like high density planting, introduction of high value species and popularization of promising new technologies should be made attractive for adoption by the small farmers to increase and sustain their incomes.

AEx 14

i	Name of the Society:	All India Agricultural Students Association
ii	Title:	4th National Youth Convention on Federating Agri Students into Business Group for Remunerative Agriculture: The youth Perspective
iii	Venue and Date(s):	Jawaharlal Nehru Krishi Vishwa Vidhyalaya- Jabalpur (MP) 15-16 th February, 2019
iv	Amount of grant by ICAR	Rs.4.00Lakh
v	ICAR's Sanction no.	F. No. 23 (34)/2018-Cdn (Tech)
vi	Recommendations:	<ul style="list-style-type: none"> ◆ More emphasis needs to be given for infrastructure development for cold storage warehouses. ◆ Digital India need to be used for price forecasting and delivery of commodities.

AEx 15

i	Name of the Society:	Bihar Agricultural University, Sabour
ii	Title:	National Farmers Science Congress on Grassroots Innovations in Farm Production, Value Chain Integration
iii	Venue and Date(s):	Sabour, Bhagalpur (Bihar) – 813210 August, 2018
iv	Amount of grant by ICAR	Rs .3.50Lakh
v	ICAR's Sanction no.	F. No. 23 (16)/2018-Cdn (Tech)
vi	Recommendations:	<ul style="list-style-type: none"> ◆ There is a need to integrate community-based grass root innovations with NARS to augment agricultural productivity and profitability.

AEx 16

i	Name of the Society:	Gayatri Educational & Cultural Society
ii	Title:	Integrated Farming for the Rural Area
iii	Venue and Date(s):	Bahadurgarh 23rd March 2019
iv	Amount of grant by ICAR	Rs. 2.50Lakh
v	ICAR's Sanction no.	F. No. 23 (84)/2018-Cdn (Tech)
vi	Recommendations:	<ul style="list-style-type: none"> ◆ Judicious mix of farming and non farming occupations for various rural communities should be encouraged to stabilize their income and livelihood. ◆ Local communities should be involved in water harvesting and enhanced use efficiency.

AEx 17

i	Name of the Society:	Society for Integrated Development of Agriculture, Veterinary and Ecological Sciences
ii	Title:	Women Empowerment through Agro-Entrepreneurship for Livelihood Security
iii	Venue and Date(s):	Sher- E- Kashmir University of Agricultural Science and Technology of Jammu, Chatha, J&K. February 07-08, 2019
iv	Amount of grant by ICAR	Rs. 2.50Lakh
v	ICAR's Sanction no.	F. No. 23 (78)/2018-Cdn (Tech)
vi	Recommendations:	<ul style="list-style-type: none"> ◆ Empowerment of women in establishment of hi-tech kitchen gardens in the urban areas for improving nutritional requirements of the farm families must be encouraged. ◆ Periodic and systematic capacity building of farm women in exploiting modern tools and technologies including decoding of weather forecast in primary production, value addition and supply chain is required.

AEx 18

i	Name of the Society:	Chaitanya Vihar Vikash Manch
ii	Title:	Kisan Kalyan Seminar
iii	Venue and Date(s):	Menar, Bihar 16.02.2019
iv	Amount of grant by ICAR	Rs. 1.87 Lakhs
v	ICAR's Sanction no.	F.F.NO. 23 (17)/2018-Cdn (Tech)
vi	Recommendations:	
	<ul style="list-style-type: none"> ◆ Wherever possible, scientific utilization of forest resources by tribal communities must be encouraged. ◆ Indiscrete burning of forest biomass should be avoided to reduce carbon foot print of the ecosystem. 	

AEx 19

i	Name of the Society:	All India Agricultural Students Association
ii	Title:	4thNational Youth Convention on Federating Agri Students into Business Group for Remunerative Agriculture: The Youth Perspective
iii	Venue and Date(s):	Jawaharlal Nehru Krishi Vishwa Vidhyalaya, Jabalpur (MP) 15-16 February, 2019
iv	Amount of grant by ICAR	Rs. 4.00Lakhs
v	ICAR's Sanction no.	F.No.23 (34)/2018-Cdn. (Tech.)
vi	Recommendation:	
	<ul style="list-style-type: none"> ◆ The recommendations and the framework of V Deans Committee must be implemented to expose agricultural graduates in agri-entrepreneurship and start up. 	



ECONOMICS, STATISTICS & MARKETING (ESM)



ESM 1

i	Name of the Applicant	Agricultural Economics Research Association (AERA), NASC Complex, New Delhi
ii	Title	24th Annual Conference of AERA at theme “Agriculture for Nutrition Security”
iii	Venue and Date(s)	15-17 December, 2016 at IVRI, Izatnagar, Bareilly
iv	Amount of grant by ICAR	Rs. 2.00 Lakh
v	ICAR's Sanction no.	F.No.23(18)/2016-Cdn(Tech)
vi	Recommendations:	<ul style="list-style-type: none"> ◆ Considering the high demand of fish in the North-Eastern region, there is a need to initiate economically sound new technological interventions to boost fish production and consequently nutrition security in the region. ◆ Production of non-wood forest products (NWFPs) to enhance economic and nutrition security should be given emphasis for poor people in tribal areas. ◆ Need to increase the area under pulses by utilizing fallow lands and adopting intercropping.

ESM 2

i	Name of the Applicant	Indian Society of Agricultural Marketing, Rajendranagar, Hyderabad
ii	Title	30th National Conference on Agricultural Marketing
iii	Venue and Date(s)	October, 2016 at BHU, Varanasi.
iv	Amount of grant by ICAR	Rs. 3.00 Lakhs
v	ICAR's Sanction no.	F.No.23(35)/2016-Cdn.(Tech.)
vi	Recommendations:	<ul style="list-style-type: none"> ◆ Capacity building programmes on the process of e-NAM for various stakeholders in markets implementing e-NAM, grading and assaying and dissemination of market information is essential. ◆ Creating awareness about e-NAM and future market and its benefits to farmers through different extension programmes is needed. ◆ Linking FPOs to e-NAMs and future market programmes be conducted for capacity building of CEOs and Directors of FPOs. ◆ Promoting diversified roles to be performed by the FPO/ SHG on the wake of changing needs of agricultural marketing is required. ◆ Research programmes making a comprehensive and in depth analysis of various dimensions of the implementation of FPOs, futures market and e-NAM and challenges encountered and benefits realized by various stakeholders is essential.

ESM 3

i	Name of the Applicant	Navsari Agricultural University, Navsari
ii	Title	National Seminar on Forest and Tree Based Land Use Systems for Livelihood, Nutritional and Environmental Security
iii	Venue and Date(s)	21-23 December 2016 at Main Campus of Navsari Agricultural University, Navsari
iv	Amount of grant by ICAR	Rs. 1.50 Lakhs
v	ICAR's Sanction no.	F.No.23(85)/2016-Cdn(Tech)
vi	Recommendations: <ul style="list-style-type: none"> ◆ Setting up of priority of threatened species for its conservation in <i>in situ</i> and <i>ex situ</i> in different ecological zones must be primed. ◆ Provision for on-farm conservation of forest genetic resources and establishment of germplasm bank to conserve high yielding genotype for future breeding programme and commercial utilization. ◆ Costal agro forestry research must be promoted for environmental and livelihood security. ◆ There is a need for policy framework to regulate the cultivation fast growing tree species under water stress ecosystem. 	

ESM 4

i	Name of the Applicant	Indian Society of Agricultural Statistics
ii	Title	International Conference on Statistics and Big Data Bioinformatics in Agricultural Research.
iii	Venue and Date(s)	21-23 November, 2016 at ICRISAT, Patancheru, Hyderabad.
iv	Amount of grant by ICAR	Rs. 8.00 Lakh
v	ICAR's Sanction no.	F.No.24(8)/2016 Cdn. (Tech)
vi	Recommendation: <ul style="list-style-type: none"> ◆ The NARS may step up research on Big Data in agriculture so as to integrate farming under digital platform. 	

ESM 5

i	Name of the Applicant	Indian Society of Agricultural Marketing, Rajendranagar, Hyderabad
ii	Title	31st National Conference on Agricultural Marketing
iii	Venue and Date(s)	21-23 November, 2017 at Nabakrushna Choudhury Centre for Development Studies, Bhubaneswar
iv	Amount of grant by ICAR	Rs. 2.50 lakh
v	ICAR's Sanction no.	F.No.23(16)/2017-Cdn. (Tech.)
vi	Recommendation:	<ul style="list-style-type: none"> ◆ There is a need for forward and backward linkages for efficient marketing of the agri-produce using e-NAM for which capacity building as well as ease of doing business is infused.

ESM 6

i	Name of the Applicant	Agricultural Economics Research Association (India), NASC Complex, New Delhi
ii	Title	National Conference on Doubling Farmers Income: Options and Strategies
iii	Venue and Date(s)	7 -9 November, 2017 at ICAR-National academy of Agricultural Research Management, Hyderabad, Telangana
iv	Amount of grant by ICAR	Rs. 2.50 Lakh
v	ICAR's Sanction no.	F.No.23 (18)/2017-Cdn. (Tech.).
vi	Recommendation:	<ul style="list-style-type: none"> ◆ Customized strategies for large and small farmers regarding skill development, promotion and replication of successful FPOs, financial inclusion and infrastructure development are recommended. ◆ There is a need to forge forward and backward linkages between agriculture production and agro-processing to boost farmers' income. ◆ Better functioning of Agriculture Export Zone may stimulate export gains which encourage fair price to farmers. Efforts must be made to enhance the farmers' capacity in 3ps (product, price and place). ◆ For effective implementation of MSP policy, purchases should be delinked from procurement targets and advance arrangements should be made in terms of adequate number of purchase centers, handling logistics and timely payment to the farmers/sellers.

ESM 7

i	Name of the Applicant	Indian Society of Agricultural Marketing
ii	Title	Role of Women in Agricultural Production and Marketing.
iii	Venue and Date(s)	Odisha University of Agriculture & Technology, Bhubaneswar – 751003 on 8th and 9th Jan, 2019
iv	Amount of grant by ICAR	Rs. 2.50 Lakhs
v	ICAR's Sanction no.	F.No.23 (81)/2018-Cdn (Tech)
vi	Recommendation:	
	<ul style="list-style-type: none"> ◆ Women farmers need to be educated on market intelligence for proper adjustments in cropping pattern and to decide when, where and how much to sell. Capacity building programmes on the process of e-NAM should be carried out for various women stakeholders in markets implementing e-NAM, grading and assaying and dissemination of market. 	

ESM 8

i	Name of the Society:	Mukti India Foundation
ii	Title:	Women Empowerment In Agriculture
iii	Venue and Date(s):	Dwarka Community Hall, New Delhi
iv	Amount of grant by ICAR	Rs.2.50Lakh
v	ICAR's Sanction no.	No 23 (94)/2018-Cdn (Tech)
vi	Recommendations:	
	<ul style="list-style-type: none"> ◆ Confidence build-up among women is necessary for better planning and decision making for use of inputs and adoption of new technology. ◆ Need to create awareness among women farmers on environmental issues and adverse effects of environment/ climate change on crop production 	

ESM 9

i	Name of the Society:	Indian Society of Agricultural Statistics
ii	Title:	72nd Annual conference on statistics, informatics and engineering interventions- a road map to transform Indian agriculture towards prosperity


iii	Venue and Date(s):	ICAR-CIAE, 13.12.2018 to 15.12.2018
iv	Amount of grant by ICAR	Rs. 3.0 Lakhs
v	ICAR's Sanction no.	F.No.23 (19)/2018-Cdn (Tech)
vi	Recommendation:	
	<ul style="list-style-type: none"> ◆ New technologies/methods/tools in bioinformatics and genetics are the need of the hour for enhancing the agricultural productivity, efficiency and profitability. 	

ESM 10


i	Name of the Society:	Agricultural Economics Research Association
ii	Title:	Agriculture and sustainable Development Goals
iii	Venue and Date(s):	ICAR-NDRI, Karnal, Haryana 15.11.2018 to 17.11.2018
iv	Amount of grant by ICAR	Rs. 2.00Lakhs
v	ICAR's Sanction no.	F.No.23 (27)/2018-Cdn (Tech)
vi	Recommendations:	
	<ul style="list-style-type: none"> ◆ District wise mapping of resource endowments is required to identify the priority regions for investment/focus as well increasing the resource use efficiency. ◆ Vulnerability assessment must be made for different agro-ecologies/production system at micro level region so as to identify specific adaptation strategies to cope up with the climate change and associated environmental shocks and disasters. 	

ESM 11

i	Name of the Society:	University of Agricultural Sciences, Dharwad
ii	Title:	National Conference on “Advanced Research Methodologies in Social Science”
iii	Venue and Date(s):	University of Agricultural Sciences, Dharwad 26.02.2019 to 28.02.2019
iv	Amount of grant by ICAR	Rs. 2.0 Lakhs
v	ICAR's Sanction no.	F.No.23 (90)/2018-Cdn (Tech)
vi	Recommendations:	
	<ul style="list-style-type: none"> ◆ In-depth qualitative, ethnographic studies need to be carried out to measure the socio-economic status of farm families and monitor changes over time. ◆ Cross-learning of empowerment strategies adopted globally may be exploited for the betterment of livelihood of rural women. 	



AGRICULTURE ENGINEERING



A Eg 1

i	Name of the Applicant	Bioved Research Society, Allahabad
ii	Title	19 th Indian Agricultural Scientists and Farmers Congress on “Prospects of Green Economy and Value Addition Technology for attracting and retaining youth in Agriculture and Rural Sector”
iii	Venue and Date(s)	18 th -19 th February 2017 at Auditorium of Bioved Krishi Prodyogiki Gram, Moharab, Sringerpur, Allahabad
iv	Amount of grant by ICAR	Rs. 1.50 Lakhs
v	ICAR's Sanction no.	F.No.23(43)/2016-Cdn. (Tech.)
vi	Recommendation:	<ul style="list-style-type: none"> Innovative measures may be developed and demonstrated to open new vistas for attracting and retaining youth in agriculture.

A Eg 2

i	Name of the Applicant	Dr. Panjabrao Deshmukh Krishi Vidyapeeth P.O. Krishinagar, Akola
ii	Title	National Conference on agro processing based entrepreneurship development for sustainable livelihood
iii	Venue and Date(s)	November, 2016 at Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Krishinagar, Akola, Maharashtra
iv	Amount of grant by ICAR	Rs. 2.00 Lakhs
v	ICAR's Sanction no.	F.No.23(44)/2016-Cdn. (Tech.)
vi	Recommendation:	<ul style="list-style-type: none"> Entrepreneurship must include areas of agri-inputs such as soil testing, seed and fertilizers and agro-processing sector.

A Eg 3

i	Name of the Applicant	Chanchal Mukti Sudha Mahila Silai Udyog Boutique Prashikshan Sansthan, Shekhpura Bagicha, Patna
ii	Title	The programme for the rural farmers on Processing and value addition-Farm Gate opportunities

iii	Venue and Date(s)	February 2017 at Krishi Vigyan Kendra, Patna
iv	Amount of grant by ICAR	Rs. 2.50 Lakhs
v	ICAR's Sanction no.	F. No. 23(53)/2016-Cdn. (Tech.)
vi	Recommendations: <ul style="list-style-type: none"> ◆ Augmentation of mechanization at Farmers fields through custom hiring will help in reducing the drudgery in agriculture especially for farm women and enhance efficiency. 	

AEg 4

i	Name of the Applicant	Society for Disability and Rehabilitation Studies, Vasant Kunj Enclave, New Delhi
ii	Title	National Workshop on Economic Empowerment of Disabled Farmers through Skill Development and Self Help Groups
iii	Venue and Date(s)	24-25 February, 2017 at Auditorium/Conference Room, ICAR- CIAE, Bhopal
iv	Amount of grant by ICAR	Rs. 2.50 Lakhs
v	ICAR's Sanction no.	F.No.23(63)/2018-Cdn(Tech)
vi	Recommendations: <ul style="list-style-type: none"> ◆ Promotion of R & D activities for innovation of new tools and techniques for <i>Divyang</i>. ◆ Training to disabled farmers through National Skill Development Corporation. ◆ Provision of financial support to needy disabled farmers for procuring state-of-the art newly developed assistive devices through PSUs/PSBs under CSR activities. 	

AEg 5

i	Name of the Applicant	Department of Bioenergy, Agricultural Engg. College and Research Institute, TNAU, Coimbatore
ii	Title	National Symposium on Trends in Agricultural and Bio-systems Engineering (TABE 2016)
iii	Venue and Date(s)	23-24 February 2017 at Department of Bioenergy, Agricultural Engg. College and Research Institute, TNAU, Coimbatore
iv	Amount of grant by ICAR	Rs. 2.00 Lakhs
v	ICAR's Sanction no.	F. No.23(68)/2016-Cdn.(Tech.)

vi	<p>Recommendations:</p> <ul style="list-style-type: none"> ◆ Establishment of a farm machinery bank especially in low farm power availability regions for machines being manufactured elsewhere in the country. There is an urgent need to innovate custom service or a rental model by institutionalization for high cost farm machinery and can be adopted by private players or Governmental organizations in major production hubs. ◆ To achieve higher production levels, the quality of farm operations like seedbed preparation, sowing, application of fertilizer, irrigation, weeding, harvesting and threshing will have to be improved by using precision and efficient equipment.
-----------	--

AEg 6

i	Name of the Applicant	Indian Society of Agricultural Engineers, NASC Complex, New Delhi
ii	Title	51st ISAE Annual Convention and National Symposium on Agricultural Engineering for sustainable and Climate Smart Agriculture
iii	Venue and Date(s)	16-18 February 2017 at CCSHAU, Hisar, Haryana
iv	Amount of grant by ICAR	Rs. 3.50 Lakhs
v	ICAR's Sanction no.	F.No.23(72)/2016-Cdn(Tech)
vi	<p>Recommendations:</p> <ul style="list-style-type: none"> ◆ Solar power is best option under climate change scenario and other technologies like green house for production, use of drones in agriculture and remote sensing etc. are to be given priority for research and technology transfer. ◆ For increasing the profitability of agro processing of diverse commodities customized tools and machinery may be developed/improved and commercialized. 	

AEg 7

i	Name of the Applicant	UP Council of Agricultural Research, Kisan Mandi Bhavan, Gomati Nagar, Lucknow
ii	Title	International Congress on Post-Harvest Technologies of Agricultural Produce for sustainable Food and Nutritional security
iii	Venue and Date(s)	10-12 November, 2016 at Integral University, Lucknow
iv	Amount of grant by ICAR	Rs. 5.00 Lakhs
v	ICAR's Sanction no.	F. No. 24(1)/2016-Cdn.(Tech.)
vi	<p>Recommendations:</p> <ul style="list-style-type: none"> ◆ Cost effective storage systems for agro processing of different capacity need to be developed and popularized. ◆ Need-based training of farmers and grain storage agency workers on bulk storage systems with long shelf-life may be put in place. 	

AEG 8

i	Name of the Applicant	Indian Society of Agricultural Engineers, NASC Complex, Pusa, New Delhi
ii	Title	52 nd Annual Convention of ISAE and National Symposium on Doubling Farmers' Income through Technological Interventions
iii	Venue and Date(s)	8-10 January, 2018 at Anand Agricultural University, Anand, Gujarat
iv	Amount of grant by ICAR	Rs. 5.00 Lakh
v	ICAR's Sanction no.	F.No.23(44)/2017-Cdn. (Tech.)
vi	Recommendations: <ul style="list-style-type: none"> ◆ <i>In situ</i> decomposition of paddy straw using the straw cutting machine should be taken up on priority. ◆ Tractor-operated raised-bed planter should be promoted to increase the area under pulses. ◆ Electrostatic prescription (ESP) for grain cleaning and grading units should be recommended for grain mills to avoid dust pollution. ◆ Bio-signal processing for detection and control of microorganisms in stored food grains and use of antimicrobial packaging for baked foods must be encouraged. ◆ Use of gray water with efficient filtration system is desired for irrigation purpose to save depleting fresh water resources. 	

AEG 9

i	Name of the Applicant	The Energy and Resource Institute, Lodhi Road, New Delhi
ii	Title	International Conference on Nano biotechnology for Agriculture: from Research to Innovation (nanoforagri2017)
iii	Venue and Date(s)	20-21 November, 2017 at India Habitat Centre, Lodhi Road, New Delhi and TERI Retreat, TERI Gram, Gurugram
iv	Amount of grant by ICAR	Rs. 2.00 Lakh
v	ICAR's Sanction no.	F. No. 24(17)/2017-Cdn.(Tech.)
vi	Recommendations: <ul style="list-style-type: none"> ◆ Promotion of Nano technology in agriculture especially in seed treatment, nutrient management, pesticide use, waste disposal etc. must be encouraged. ◆ There is a need to put in place safety certification of Nano products over a period of time. 	

Aeg 10

i	Name of the Applicant	National Environmental Science Academy, New Delhi
ii	Title	National Conference on Current Trends in Plant Science and Molecular Biology for Food Security and Climate Resilient Agriculture (PSMB 2018)
iii	Venue and Date(s)	15-16 February 2018 at College of Agriculture, Rajmata Vijayaraje Scindia Krishi Vishwa Vidyalaya Gwalior, M.P
iv	Amount of grant by ICAR	Rs. 2.50 lakh
v	ICAR's Sanction no.	F.No.23(51)/2017-Cdn.(Tech.)
vi	Recommendation:	<ul style="list-style-type: none"> It is recommended that technologies of hydroponics and tissues culture and role of marker assisted breeding should be promoted with new incentives to farmers.

Aeg 11

i	Name of the Society:	SRM Institute of Science and Technology
ii	Title:	Indian Plant Science Congress
iii	Venue and Date(s):	Dr. T.P Ganesan Auditorium, SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu- 603203 23.01.2019 – 25.01.2019
iv	Amount of grant by ICAR	Rs. 1.25Lakh
v	ICAR's Sanction no.	F. No .23 (86)/2018-Cdn. (Tech.)
vi	Recommendations:	<ul style="list-style-type: none"> It is needed to integrate plant biology in the curriculum of engineering physics, chemistry, biotechnology and other discipline due to the increased applications of bio-inspired and bio-sources products and technology. Proactive regulatory regime needs to be formed in order to make powerful technologies like gene editing to enhance the crop production and nutrient quality.



AGRICULTURE EDUCATION



AEd 1

i	Name of the Applicant	Institute of Agricultural Sciences, Banaras Hindu University, Varanasi
ii	Title	National Intellectual Convention on Resurrection of Agricultural Education and Research in India
iii	Venue and Date(s)	9-10 August, 2017 at Institute of Agricultural Science, BHU, Varanasi
iv	Amount of grant by ICAR	Rs. 5.00 Lakh
v	ICAR's Sanction no.	F. No.23 (28)/2017-Cdn. (Tech).
vi	Recommendations:	
	<ul style="list-style-type: none"> ◆ Learning ecosystem must be strengthened with inter-weaving of best practices including e-media and ICT tools. ◆ Education on disaster management like weather, flood, drought etc. may be incorporated in graduate programmes. 	

AEd 2

i	Name of the Society:	Indian Agricultural Universities Association (IAUA)
ii	Title:	IAUA Golden Jubilee – International Conference “Agricultural Education-Sharing Global Experience
iii	Venue and Date(s):	National Agricultural Sciences Complex Pusa., (NASC) Dev Prakash Shastri Marg, Campus, New Delhi- 110012
iv	Amount of grant by ICAR	Rs. 8.0Lakh
v	ICAR's Sanction no.	F.No.24 (8)/2018-Cdn. (Tech.)
vi	Recommendations:	
	<ul style="list-style-type: none"> ◆ Establishment of an EARTH University in India, on the model of the EARTH University in Costa Rica is recommended. ◆ Strong and long-term linkages should be established between AUs and corporate sector. ◆ The “World Grant University” concept may be incorporated for effective international cooperation, especially need-based South-South, South-North and Tri-lateral collaborations. 	



Indian Council of Agricultural Research (ICAR)
Krishi Bhawan, New Delhi 110001

