

ICAR-NAARM

ANNUAL REPORT

2014-15



ICAR-National Academy of Agricultural Research Management
Indian Council of Agricultural Research





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ICAR-National Academy of Agricultural Research Management
Indian Council of Agricultural Research
Hyderabad (Telangana) 500030, India





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ICAR-National Academy of Agricultural Research Management, Indian Council of Agricultural Research

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Editor: Ravi Viswanathan

Cover 1 photographs from top:

Dr D. Rama Rao (left) received the 'Agriculture Leadership Award 2014' on
behalf of ICAR-NAARM from Prof. P.J. Kurien (right).

Participants during the inaugural session of the 100th batch of FOCARS on 1 Jul 2014
inaugurated by Dr M.S. Swaminathan (right) along with Dr S. Ayyappan (left).

Delegates at the NAAS Silver Jubilee Symposium on 23 Aug 2014.

Farmers in ICAR-NAARM adopted villages interact with the scientists.

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**The ICAR-National Academy of Agricultural Research Management
conferred the
'Agriculture Leadership Award 2014'
by the Agriculture Today Group
in the category
'Academic Leadership'
for "Innovative Leadership in Agriculture Research Management,"
by enhancing the capacities of individuals and institutions of the
National Agricultural Research System**



Preface


INNOVATIVE capacity building programmes with new courses, adoption of villages and human resources development planning for the Indian Council of Agricultural Research highlights the work at ICAR-NAARM during 2014–15. The flagship programme 'Foundation Course for Agricultural Research Service (FOCARS)' had its 100th Batch that started on 1 Jul 2014. The inaugural session was initiated by Dr M.S. Swaminathan, the person behind the start of FOCARS in 1976.

The Academy also started for the first time two courses, the 'Foundation Course for Faculty of Agricultural Universities' and the 'Management Development Programme for Newly Recruited Programme Coordinators of Krishi Vigyan Kendras.' An International training programme was held for the Sri Lanka Council for Agricultural Research Policy. All the other regular programmes such as the 'Executive Development Programmes for Leadership Development,' 'Refresher Courses,' 'Workshops,' 'Orientation Programmes' and 'Sponsored Programmes' continued with improvements in the course based on feedbacks. The RFD was rated as very good.

We regularly kept in touch with the needs of the ICAR and responded to the requirements. The ICAR Headquarters, in turn, provided us with timely and comprehensive information on major policies and changes. The ICAR-NAARM in association with the ICAR Headquarters planned the Priority Setting, Monitoring and Evaluation of research and training policy.

The Academy was conferred the 'Agriculture Leadership Award 2014' of the Agriculture Today Group under the category 'Academic Leadership' for "Innovative Leadership in Agriculture Research Management," by enhancing the capacities of individuals and institutions of the National Agricultural Research System (NARS).

This Annual Report gives details of the activities during the year. I am sure that it will be useful to Research Managers, Scientists, Administrators, Students and other Stakeholders.


(D. Rama Rao)
Director

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Executive Summary

THE ICAR-NAARM received the “Agriculture Leadership Award” of the Agriculture Today in recognition of its pivotal role in capacity building for enhancing the performance and effectiveness of the National Agricultural Research System (NARS).

The activities of the ICAR-National Academy of Agricultural Research Management (ICAR-NAARM) covered four broad areas, ‘Capacity Building,’ ‘Research,’ ‘Postgraduate Education’ and ‘Policy Support.’

A total of 45 capacity building programmes were conducted for 1,833 participants. These included two Foundation Courses for Agricultural Research Service (FOCARS 99 and FOCARS 100), one Foundation Course for State Agricultural Universities, two Executive Development Programmes for Leadership Development, two Management Development Programmes for Leadership Development (Pre-RMP), 15 Management Development Programmes and Faculty Development Programmes, two Refresher Courses, One Summer School, seven Workshops/seminars, seven sponsored programmes (Off-campus), three Orientation Programmes and one International Programme.

The FOCARS 100, was the 100th Batch. Dr M.S. Swaminathan who had launched the FOCARS during his tenure as Director-General, ICAR, in 1976, inaugurated the programme on 1 Jul 2014. A souvenir *FOCARS and After: Reminiscences, 1976–2014* was released. The other publications were a directory having the list of participants in FOCARS from the first batch to the 99th batch; an album ‘FOCARS Memories Unfolded,’ having the group photographs of FOCARS 1 to 99; and *Swarnima*, a compilation of poems in Hindi by participants of various FOCARS. The Department of Posts, Government of India released the NAARM Special Cover with NAARM MyStamp.

Two innovative CBPs were introduced. These were the Foundation Course for Faculty of State Agricultural Universities and the Management Development Programme for newly recruited Programme Coordinators of the Krishi Vigyan Kendras taking into account the changing research-extension-development dynamics.

An International Training Programme on “Agricultural Research Management,” for the scientists of the Sri Lanka Council for Agricultural Research Policy under the Work Plan 2013–14 was conducted.

The research activities continued under Enhancing leadership and governance; Science and technology for innovation and sustainable development; Information and communication management; Extension systems management; Education systems management and Agribusiness management. The Academy collaborated with the International Food Policy Research Institute (IFPRI), the ICAR-Intellectual Property and Technology Management Unit (ITMU), ANGRAU and several other institutions in carrying out these activities.

The ICAR-NAARM along with the IFPRI designed a structure framework and guidelines for the priority setting, monitoring and evaluation of research projects.

As part of the IFPRIs Agricultural Science and Technology Indicators (ASTI) project, two questionnaires were standardized for the Indian NARS.

The ITMU at ICAR-NARM provided services to several ICAR institutes, SAUs, KVKs, and grassroots innovators as well as filing for patents and copyrights.

An Information System for managing multilocational experiments was done for the All-India Coordinated Research Project on Vegetable Crops (AICRP-VC), Varanasi.

A user friendly online software ‘AHP Analyser’ was developed that makes analytic hierarchy process for research prioritization simple for online collaboration.

A knowledge platform for farmers of the adopted villages of ICAR-NAARM, S. Lingotam and Tallasingaram is under development. The cadastral maps of the villages were digitized and a farmer and household database was developed.

A semantics based methodology was developed to identify course with potential to be hosted on a MOOCs platform.

A strategy paper on e-learning was prepared for the Division of Education, ICAR, New Delhi, on Distance Education through e-courses in Agriculture.

The performance and challenges of agribusiness education in the NARS was studied.

The Academy also provided support to the ICAR by developing guidelines for implementing the Annual Training Plan for HRD, for all cadres of ICAR and organized several sensitization programmes.

The ICAR-NAARM 4th (2012–13) batch and the 5th batch (2013–2015) students of the Post-graduate Diploma in Management – Agriculture (PGDMA), were placed in different organizations with salary offers of more than ₹6 lakhs/annum. The 6th batch of the PGDMA commenced in Jul 2014.

Students of the PGDMA got several prizes such as 'IIMian for a Day in 2014,' conducted by the IIM, Ahmedabad and 'B-Plan Competition,' 'Case Study Presentation' and 'Poster Presentation' categories.

Contact programmes for the Post-graduate Diploma in Technology Management in Agriculture were held. The course works on imparted online thro the 'Professional Virtual Community and Learning Management System developed by the Tata Consultancy Services.

The meeting of the Research Advisory Committee, Institute Management Committee, Academic Committee, Institute Research Council and the ICAR-NAARM Senior Officer's Committee were held.

The personnel of ICAR-NAARM participated in various training, symposium, conferences, workshops and events both in India and outside India.

The staff of ICAR-NAARM participated as Micro-observers for the elections to the MPTC/ZPTC 2014, General Elections for the Parliament and Assembly elections for Andhra Pradesh and as Enumerators for the Intensive Household Survey in Ranga Reddy District.

The ICAR-NAARM also participated in the All-India Rose Show held at the Hyderabad International Convention Centre and also in the conference 'Rose Eternal' from 29 Nov to 2 Dec 2014.

Dr M.S. Swaminathan organized a deliberation "Strategies to Manage the Deficit Monsoon 2014, at ICAR-NAARM with the Vice-Chancellors of SAUs.

A meeting of the ICAR' Expert Committee to work out the "Minimum Standards of Higher Agricultural

Education," was held from to 7 May 2014..

The National Academy of Agricultural Sciences (NAAS) Silver Jubilee Symposium "Nutritionally Sensitive and Environmentally Sustainable Agriculture for India's Food and Nutrition Security: Challenges and Opportunities," was held on 23 Aug 2014.

A Workshop for "Tackling Food Inflation in India," in collaboration with the IFPRI and the Centre for Economic and Social Studies (CESS) was held at CESS, Hyderabad on 28 Nov 2014.

The 18th ADNAT (Association for the Promotion of DNA Fingerprinting and other DNA Technologies) Convention and Symposium in association with ICAR-NAARM and the University of Hyderabad (UOH) was conducted in the UOH from 23 to 25 Feb 2015.

The ICAR-NAARM adopted two villages, S. Lingotam and Talla Singaram based on the Prime Minister's "Sansad Adarsha Gram Yojana," to improve the livelihoods, integrate market linkages and initiate faster, cheaper and efficient ICT-based transfer-of-technology. This programme is in PPP mode along with Pratishta industries and all ICAR institutes based in Hyderabad.

Special Swachh Bharat Abhiyans were conducted on 2 Oct 2014, 18 Jan 2015 and 14 Mar 2015.

The National Science Day, ICAR Foundation Day, ICAR-NAARM Foundation Day, Vigilance Awareness Week, Rashtriya Ekta Divas, Communal Harmony Week and the Hindi Fortnight celebrations were conducted on the respective dates.

All-India Competitive Examinations were held at ICAR-NAARM as it is one of the national centres.

Health camps and talks were conducted by the ICAR-NAARM Health centre not only in the campus but also in the adopted villages.

'Reunirse 14,' the annual meet of the ICAR-NAARM PG Alumni Association was held on 6 Sep 2014.

Scientists won the best paper and best poster prizes at different conferences.

ICAR-NAARM won prizes in the ICAR South Zonal Sports Meet 2014 and the ICAR Inter-Zonal Sports Meet 2015 including the 'Best All-rounder Trophy,' and the 'Player of the Tournament Award.'



Organogram of
 ICAR-National Academy of Agricultural Research Management
Indian Council of Agricultural Research
 Hyderabad (Telangana) 500 030

*Secretary, Department of Agricultural Research and Education and
 Director-General, Indian Council of Agricultural Research, New Delhi*

Deputy Director-General (Agricultural Education)
 ICAR, New Delhi

Research Advisory Committee

Quinquennial Review Team

Director
 NAARM

Institute Management Committee

Joint Director

- Divisions
- Human Resources Management
- Research Systems Management
- Information and Communication Management
- Agribusiness Management
- Education Systems Management
- Extension Systems Management

Academic Cell

Joint Director (Administration) and Registrar

Official Language Cell

Centralized Services
 Hostel
 Farm
 Health Care
 Maintenance (Civil and Electrical)
 Transport

Comptroller
 (Finance and Accounts)

The NAARM: What is it and what it does?

THE ICAR-National Academy of Agricultural Research Management was established by the Indian Council of Agricultural Research in 1976 in Hyderabad to address issues related to agricultural research and education management. In the initial years, the Academy primarily imparted foundation training to the new entrants of the Agricultural Research Service (ARS) of ICAR. Subsequently, its role expanded to include research, capacity building of senior professionals of national as well as of the international National Agricultural Research System (NARS). In the XI Plan, the ICAR-NAARM also started post-graduate education programmes in agricultural management and technology management to address the emerging challenges of linking research with the market.

Vision

A global knowledge institution enabling National Agricultural Research and Education Systems adapt to change through continuous innovations.

Mission

To enhance leadership, governance and innovation capacities of NARS through capacity strengthening, education, research, consultancy and policy support.

Mandate

- ✳ To be an integrated institution of agricultural management focusing on creation, dissemination and

application of knowledge through its education, training, research, consultancy and policy support programmes.

- ✳ To serve as an apex resource centre for collection, compilation, documentation and dissemination of innovative learning resources and practices in agricultural management followed in India and other countries.

- ✳ To work as a catalyst for building and enhancing the competence of individual scientists and the capability of institutions of NARS for addressing contemporary issues in agricultural management.

- ✳ To facilitate the organizational renewal of the NARS and management of change.

- ✳ To serve as a think tank for the NARS and provide research-based inputs and advice to agricultural policy makers, planners, administrators, and others.

- ✳ To establish and foster functional partnerships and effective networking with leading management institutes of the world in order to emerge as global thought and knowledge leader.

Areas of Work

- ✳ Strengthen individual and institutional capacity of scientists, faculty and managers of NARS for leadership, good governance, and efficient management to promote the transformation of NARS to NAIS, by organizing need-based, multitier, stakeholder-driven and customized training programmes.

- ✳ Impart agricultural management education that develops research leaders, agribusiness and technol-

Ravi Viswanathan





Ravi Viswanathan

ogy managers, entrepreneurs and intrapreneurs with a global perspective and a strong commitment to sustainable growth of agriculture.

- * Undertake research that addresses emerging concerns of national and global agriculture, supports policy, and enhances the capacity of NARS for innovation.

- * Promote knowledge systems and technology dissemination through innovative use of Information and Communication Technologies.

Programmes and Activities

Capacity Building Programmes

The ICAR-NAARM organizes capacity building programmes (CBP) for research managers, scientists, teachers, technical, administrative and finance personnel of the NARS. It classifies its CPB under 'Foundation Courses,' 'Leadership Development Programmes,' 'Refresher Courses,' 'Management Development Programmes/Faculty Development Programmes,' 'Workshops,' 'Sponsored Programmes,' and 'International Training Programmes.'

Research

The Academy receives significant support for research from ICAR and other agencies through both direct and competitive grants. The Academy addresses research needs in the following major areas, which also indicate the functional divisions of the Academy:

Research Systems Management: Agricultural scenario and policy analysis; research project management; research prioritization, monitoring, evaluation and impact assessment; identifying new policy initiatives for

productivity enhancement of NARS; policy studies on agricultural production-consumption systems and sustaining rural livelihoods; technology forecasting and assessment in agriculture; intellectual property management; agribusiness management; agrobiodiversity and biosecurity management.

Information and Communication Management: Information technology policy for NARS; information technology based decision support systems; digital multimedia resources for agricultural development; geographical information systems; knowledge management; participatory technology development and transfer; distance training; and collaborative tools for promoting research.

Human Resource Management: HRD strategies for NARS; leadership and organizational climate; evolving systems for HRD; performance appraisal and accountability in agricultural research and education; impact assessment of training; and educational technologies for enhancing learning.

Agribusiness Management: Agricultural market research; supply-chain management; commodity trading and futures markets; finance and insurance; international trade in agriculture; agri-food retail management; rural marketing; agribusiness strategy; risk management in agribusiness.

Education Systems Management: Curriculum design and development; instructional strategies and techniques; technology in education including multimedia enriched e-learning content development and delivery; teaching-learning processes; academic evaluation; educational planning, administration and management.

Extension Systems Management: Extension policy,

planning and management; Extension information systems; ICTs in participatory technology development; ICT applications for village knowledge centres; Institutional innovations in extension; e-extension and m-extension, gender mainstreaming in extension.

Education

Two post-graduate Diploma programmes are offered:

Post-graduate Diploma in Management (Agriculture) PGDM(A): A two-year programme for agriculture and allied disciplines approved by the AICTE.

Post-graduate Diploma in Technology Management in Agriculture (PGD-TMA): A one-year programme for experienced agricultural professionals offered in distance mode in association with the University of Hyderabad, Hyderabad.

Consultancy

Both institutional and individual consultancies are undertaken in areas related to agricultural research policy and management based on specific requests from client organizations.

Policy Support

The Academy supports the NARS by suggesting policy options to improve their efficiency and effectiveness. In addition, the Academy provides a platform for dialogue on important national issues through brainstorming sessions/high powered committee meetings. Some important issues addressed in the past include bio-security, technology forecasting, food and nutritional security, precision agriculture, good governance, public-private partnership, climate change and agricultural development, and others.

Linkages

The ICAR-NAARM has partnerships with many Indian and international institutions. These include:

- * The ICAR institutions and Krishi Vigyan Kendras.
- * The Government of India institutions such as the

Department of Science and Technology (DST).

- * State Agricultural Universities and Central Universities such as the University of Hyderabad and others.

- * Management Institutions such as the Administrative Staff College of India, Indian School of Business, Indian Institutes of Management, National Institute of Agricultural Extension Management, National Institute of Rural Development and Institute of Public Enterprises.

- * Consultative Group for International Agricultural Research institutions such as the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), Patancheru, India, the International Maize and Wheat Improvement Center (CIMMYT), and International Food Policy Research Institute (IFPRI),

- * Private Sector and NGOs.

- * The World Bank and the Food and Agriculture Organization of the United Nations (FAO).

- * South Asian Association for Regional Cooperation (SAARC).

- * Department for International Development (DFID, United Kingdom).

- * NARS of developing countries such as Sri Lanka, Nigeria, Yemen, and Tanzania.

- * Universities and institutions in both developed and developing countries.

Location

NAARM is located in Rajendranagar (17°18'49"N latitude and 78°24'42" East longitude) in Hyderabad about 20 km from the Hyderabad Rajiv Gandhi International Airport, Shamshabad, 25 km from the Secunderabad Railway Station, 16 km from the Hyderabad Railway Station, 16 km from the Kacheguda Railway Station and 12 km from the Imliban/Mahatma Gandhi Bus Station. Hyderabad has a salubrious climate with an elevation of 475 m above the MSL. The annual rainfall is about 800 mm mostly during Jun to Oct from the southwest monsoon. Minimal rainfall is received from Nov to May. The annual mean temperature is about 26°C (78.8°F). Summer is hot (exceed 40°C or 104°F) and winter (December) is moderately cold (from 10°C or 50°F and above).



Capacity Building

THE ICAR-NAARM classifies its “Capacity Building Programmes (CBP)” under ‘Foundation Courses,’ ‘Leadership Development Programmes,’ ‘Refresher Courses,’ ‘Management Development Programmes/ Faculty Development Programmes,’ ‘Workshops,’ ‘Sponsored Programmes,’ ‘Orientation Programmes’ and ‘International Training Programmes.’

A total of 45 capacity building programmes for 1,833 participants were conducted by ICAR-NAARM during 2014-15.

Capacity building programmes conducted by ICAR-NAARM during 2014-15.

Type of CBP	Number of CBP	Number of participants
Foundation Course: FOCARS	2	310
Foundation Course: State Agricultural Universities	1	53
EDP for Leadership Development	2	30
MDP for Leadership Development (Pre-RMP)	2	56
MDP/Faculty Development Programmes	15	273
Refresher Courses/Summer Schools	3	76
Workshops/Seminars	7	273
Sponsored Programmes (Off-campus)	7	438
Orientation Programmes	3	113
International Programmes	1	11
Other programmes	2	200
Total	45	1,833

Foundation Courses

Foundation Course for Agricultural Research Service

The Foundation Course for Agricultural Research Service (FOCARS) is induction training for the ICAR Agricultural Research Service (ICAR-ARS) probationers in the Indian Council of Agricultural Research. The objectives are to ‘Train the participants in various aspects of agricultural research and project management including developing skills for managing interdisciplinary research.’ The programme spread over three months comprises of three phases. Phase I was aimed at orienting the probationers into the National Agricultural Research System (NARS) with appropriate capacity building. Phase II comprised of a 21-days field experience training (FET). Phase III had training in multidisciplinary perspectives of agricultural research management. The scientists after successful completion

are posted to different ICAR institutes. Here they undergo institutional orientation for one month before proceeding on attachment training for three months in specialized areas identified by the respective institutions to complete their foundation training.

The core contents are ‘Agricultural Policy Perspectives,’ ‘Intellectual Property Rights and Technology Management,’ ‘Administrative and Financial Management in ICAR,’ ‘Human Resources Management,’ ‘Documentation, Presentation, and Communication Management,’ ‘Participatory Technology Development and Dissemination,’ ‘Developing Winning Research Proposal,’ and ‘Futuristic and Multi-disciplinary Perspective.’

FOCARS 100, 1 Jul to 30 Sep 2014: This was the 100th Batch of the FOCARS comprising of 71 trainees from 23 Agricultural Research Disciplines. The course started



Dr M.S. Swaminathan (third from left) releases the souvenir “FOCARS and After: Reminiscences, 1976-2014.” Also seen from left are Drs D. Rama Rao, S. Ayyappan, M.V. Rao, E.A. Siddiq and S.L. Goswami.

with an inaugural session on 1 Jul 2015 where Dr M.S. Swaminathan, was the Chief Guest. Other dignitaries who participated were Dr S. Ayyappan, Secretary, Department of Agricultural Research and Education (DARE) and Director-General, ICAR, Deputy Directors-General, Assistant Directors-General, Dr K.V. Raman, Vice-Chancellors of State Agricultural Universities and other past Directors of ICAR-NAARM, Directors of ICAR institutes at Hyderabad, retired personnel of ICAR-NAARM from 1976 and also others who had a significant role in ICAR-NAARM. Various publications were released. A souvenir “FOCARS and After: Reminiscences, 1976-2014” had Messages from the Hon’ble President of India, Shri Pranab Mukherjee, the Hon’ble Vice-President of India, Shri M.



Dr M.S. Swaminathan (above) spoke about the concept of FOCARS.

Dr S. Ayyappan (below) spoke about the changes in FOCARS.



Hamid Ansari, Hon’ble Union Minister of Agriculture, Government of India, Shri Radha Mohan Singh, Dr M.S. Swaminathan, Emeritus Chairman, M.S. Swaminathan Research Foundation, Chennai, Dr S. Ayyappan, Secretary, Department of Agricultural Research and Education (DARE) and Director-General, ICAR, Dr Gurbachan Singh, Chairman, Agricultural Scientists Recruitment Board, New Delhi, Dr Arvind Kumar, Deputy Director-General (Education), ICAR, and Dr A. Padma Raju, Vice-Chancellor, Acharya N.G. Ranga Agricultural University, Hyderabad (<http://eprints.naarm.org.in/120/>). It also had articles on FOCARS. The other publications were a directory having the list of participants in FOCARS from the first batch to the 99th batch; an album ‘FOCARS Memories Unfolded,’ having the group photographs of FOCARS 1 to 99; and *Swarnima*, a compilation of poems in Hindi by participants of various FOCARS.

During the inaugural session, the Department of Posts, Government of India released the ‘Special Cover with NAARM MyStamp’ to commemorate the event (Special Cover approval no. AP/04/2014). Dr M.S. Swaminathan released the Special Cover and

The photograph shows the audience during the inaugural session of the FOCARS 100 at ICAR-NAARM on 1 Jul 2014.



M. Ravi



M. Ravi



Photo on left: Dr M.S. Swaminathan (right) released the NAARM Special Cover and the NAARM MyStamp with Smt Mariamma Thomas and Dr S. Ayyappan (second from left). Also seen are Dr D. Rama Rao and Ravi Viswanathan. The NAARM Special Cover and NAARM MyStamp are on the top and right.

the NAARM MyStamp with Smt Mariamma Thomas, Director, Postal Services, Andhra Pradesh Postal Circle, Hyderabad and Dr S. Ayyappan. The video of the release of the Special Cover and the NAARM MyStamp can be seen at <https://www.youtube.com/watch?v=V29T6p1iz78>. Ravi Viswanathan, Editorcum-Information Officer, ICAR-NAARM conceptualized the Special Cover and the NAARM MyStamp.

FOCARS 101, 1 Jan to 31 Mar 2015: Two hundred and thirtynine trainees were trained in FOCARS 101 from 1 Jan to 31 Mar 2015. A mock FET was held at

village S. Lingotam of Chautuppal mandal in Nalgonda district for experiential learning of PRA tools for situational analysis and participatory observation of livelihoods, and interaction with the farming community. The trainees were deputed to 40 centres across India for the FET.

During the programme there were special lectures on 'Overview of Agriculture Education System,' 'Overview on Recent Advances in Horticulture R&D,' 'Innovation-led Agriculture R&D,' 'Bioinformatics,' 'Perspectives of Research Project Management,' 'Participa-

The ICAR-ARS trainees of the FOCARS 100 get together for a photograph.



M. Ravi

tory Needs Assessment for Rice Production,' 'Participatory Needs Assessment on Pest Management for Cotton and Pigeonpea,' 'Participatory Needs Assessment for Soil Health,' 'Participatory Needs Assessment for Poultry,' 'Scientific Writing,' and 'Winning Research Proposal Writing.'

Foundation Course for Newly Recruited Faculty of SAUs

The first Foundation Course for Faculty of Agricultural Universities (FOCFAU) for newly recruited Assistant Professors was held from 25 Nov to 24 Dec 2014 at ICAR-NAARM, Hyderabad. The objectives were: To orient the participants to the national and international agricultural scenario; Enhance knowledge, skills and attitude of the participants in various aspects of education, teaching-learning process and technology in education; Expose the participants to research and technology transfer processes; and Sensitize the participants to organizational capacity related to human capital, administrative and financial management.

A total number of 53 Assistant Professors were trained in the fully residential programme. The training comprised of a blend of theoretical lectures and

practical sessions in areas of 'National Agricultural Research and Education System,' 'Educational Methodology and Management,' 'Human Resource Management,' 'Research and Project Management' and 'Extension and Communication Management.'

Leadership Development Programmes

These programmes are designed for leadership development for transition of the National Agricultural Research System to the National Agricultural Innovation System. These comprise of the 'Executive Development Programmes for Leadership Development' for newly appointed Research Managers and the 'Management Development Programmes on Leadership Development' for aspiring Research Managers (Pre-RMP cadre).

Executive Development Programme for Leadership Development

Two Executive Development Programmes for Leadership were conducted from 19 to 24 Aug 2014 and from 19 to 23 Jan 2015 for newly-recruited Directors, Zonal Project Directors, Assistant Directors-General,

The ICAR-ARS trainees of the FOCARS 101 get together for a photograph.





M. Ravi

The trainees of the first Foundation Course for Faculty of Agricultural Universities (FOCFAU) get together for a photograph.

Joint Directors and others in the ICAR who are in the Research Management Position cadre. There were a total of 30 participants. The programme consisted of a blend of lectures, self-exploration instruments, case analysis, experiential learning and group discussion. The lectures included 'Leadership Excellence,' 'Procurement Management in ICAR,' 'Leadership Challenges in NARS,' 'Priority Setting, Monitoring and Evaluation,' 'Leading for Better Organizational Commitment and Citizenship Behaviour,' 'Financial Management,' 'Budget Implementation and Monitoring in

ICAR,' 'Emotional Intelligence,' 'Institution Building,' 'Administrative Vigilance,' 'Challenges of Leadership in Agricultural Research for Development,' 'Governance Issues in ICAR' and 'Strategic Leadership of Research in Public Institutions.' Dr S. Ayyappan, Secretary, DARE and Director-General, ICAR, gave away the certificate to the participants of the EDP held from 19 to 24 Aug 2014. Shri R. Rajagopal, IAS, Additional Secretary, DARE and Secretary, ICAR, New Delhi gave the certificate to the participants of the EDP held from 19 to 23 Jan 2015.

M. Ravi





M. Ravi



Left: The participants of the EDP on “Leadership Development,” held from 19 to 24 Aug 2014 get together for a photograph. Right: Dr S. Ayyappan hands over the certificate of participation in the EDP to Dr R.K. Gupta. Dr D. Rama Rao in the centre.

Management Development Programme on Leadership Development (A Pre-RMP Programme)

The participants included Head of Divisions and Project Coordinators in the ICAR and Head of Departments, Associate Directors of Research and Associate Deans in the State Agricultural Universities. Two MDPs (pre-RMP) were conducted from 15 to 26 Jul 2014 and 1 to 12 Dec 2014 for a total of 56 participants. The core contents were ‘Framework for Transition to Research Management,’ ‘Leadership Issues: Experiences from NAIP,’ ‘Leadership Excellence,’ ‘Motivational Skills for Leadership,’ ‘Current Trends in Information Management in Networked Environment,’ ‘Research Programme Prioritization,’ ‘Management of Stress,’ ‘Vigilance Management,’ ‘Public Procurement and Contract Administration,’ ‘Emotional Intelligence,’ ‘Technology Management in NARS,’ ‘Conflict Management’ and ‘Time Management.’



M. Ravi

Above: Shri R. Rajagopal (left) gave the certificate to the participants of the EDP on “Leadership Development,” held from 19 to 23 Jan 2015. Dr N.H. Rao is in the centre.

Below: The participants of the EDP get together for a photograph.



M. Ravi

Refresher Course on Agricultural Research Management

These are orientation courses organized to ‘Broaden the Research Perspectives’ of directly recruited Senior Scientists and Principal Scientists, and to ‘Acquaint the participants with appropriate research management techniques and methodologies.’ There were two Refresher Courses, the first one from 14 to 26 Jul 2014 and the second from 10 to 22 Nov 2014. A total of 50 Principal Scientists and Senior Scientists participated.

The programme consisted of a blend of lectures and interactions. Lectures were on ‘Emerging Research Areas in

Agriculture,’ ‘Market Driven Research,’ ‘NARS in India,’ ‘Strategic Management of Technology and Valuation,’ ‘GI and Biodiversity Management,’ ‘Group Dynamics,’ ‘Personality Profiling,’ ‘Scientific Writing and Presentation,’ ‘Project



The participants of the MDP on "Leadership Development (pre-RMP)" conducted from 15 to 26 Jul 2014 get together for a photograph.

M. Ravi

Prioritization Techniques,' 'IP Management and Technology Commercialization,' 'Motivation,' 'Leadership,' 'Bioinformatics in Agriculture,' 'Monitoring Agricultural Research,' 'Global Agriculture Technology,' 'Internet and Open Source Use,' 'Research Aptitude Measurement,' 'Excellence in Agricultural Research,' 'ICAR Rules and Conduct Rules,' 'Project Management,' 'New Pension Rules and TA Rules,' 'GFR and Purchase Procedures,' 'Participatory Technology Development,' 'Application of GIS,' 'Strategic Management of Technology and Valuation,' 'Project Prioritization Techniques,' and 'Orientation to SAS.'

International Training Programme

An international training programme on "Agricultural Research Management," for the Scientists of the

Sri Lanka Council for Agricultural Research Policy under the Work Plan 2013-14 was held from 22 to 31 Dec 2014. There were 11 participants. The objectives were to 'Orient the participants to various aspects and dimensions of agricultural research management,' 'Ex-



Seen in the photograph are the participants of the MDP on "Leadership Development (pre-RMP)" held from 10 to 22 Nov 2014.

M. Ravi

pose the participants to different techniques of agricultural research prioritization and systems of monitoring and evaluation of research projects,' and to 'orient

The participants of the Refresher Course on "Agricultural Research Management" held from 14 to 26 Jul 2014 get together for a photograph.

M. Ravi





Seen in the photograph are the participants of the Refresher Course on "Agricultural Research Management" held from 10 to 22 Nov 2014.

M. Ravi

the participants on conceptualization of research proposals in consortia approach.' Lectures and orientation were given on 'Project Management Techniques,' 'Leadership Issues in Research,' 'Research Innovation, Continuum Theory and Cases,' 'Emerging Challenges in Agricultural Research: Nationally and Internationally,' 'PPP in Agricultural Research in the Industry,' 'Presentation of Research Proposals,' 'Research Proposal Writing,' 'IT Applications in Research Management,' 'Conflict Management in Research Teams,' 'Geospatial Knowledge Management for Agricultural Research,' 'Research Project Formulation,' 'Administrative Issues in Research Management' and 'Stress

Management.' There were special lectures on 'Agricultural Scenario in India and Challenges' and 'Post-harvest Technology and Food Processing: Scenario in India and Challenges.'

Management Development Programmes/ Faculty Development Programmes/ Training Programmes

First MDP for Newly Recruited Programme Coordinators of KVK

The First Management Development Programme for Newly Recruited Programme Coordinators of Krishi

The participants of the international training programme on "Agricultural Research Management," for the Sri Lanka Council for Agricultural Research Policy held from 22 to 31 Dec 2014 get together for a photograph.

M. Ravi



Vigyan Kendras was a culmination of a series of discussions for capacity building of Programme Coordinators of the KVKs taking into account the changing research-extension-development dy-

namics. The programme spread over 30 days was split into three phases. This included 15 days at ICAR-NAARM, Hyderabad, 10 days at the best KVK, and five days at the Zonal Project Directorate. The objectives of the CBP at ICAR-NAARM was to familiarize participants to the 'Organizational, structural and functional aspects of the KVK system and its role in agricultural and rural development,' 'Sensitize them to the global and national perspectives on contemporary and future challenges in agricultural extension management,' 'Stimulate critical thinking, interdisciplinary teamwork and professional values and ethics for effective participation in and contribution to agricultural and rural development,' 'Provide knowledge and skills for enhancing personality and interpersonal relationships,' 'communication and negotiation,' 'motivation and organizational behavior' and equip them with modern concepts and practices of effective management of human, financial, information and knowledge resource for impact making. The core contents included 'Agricultural Extension Management,' 'Human Resource Management,' 'Knowledge Management' and 'Sharing and Technology Application and Integration' spread



Seen in the photograph are the participants of the first MDP for "Newly Recruited Programme Coordinators of Krishi Vigyan Kendras," held from 20 to 24 Nov 2014.

MDP on Biotechnology and Intellectual Property Rights

A six days

Management Development Programme on "Biotechnology and Intellectual Property Rights" was conducted for 12 participants from 16 to 21 Jun 2014. The objectives were to 'Provide an overview of the key concepts and the legal framework,' 'Lay the groundwork for further study in nuances of intellectual property and biotechnology,' 'Tool box of IP and various types of IP rights,' 'International Framework for the Protection of IP' and 'Protection of Biotechnology Inventions under Patent Law.' The participants included Principal Scientists, Senior Scientists, Scientists, Professors and Head of Departments, Associate Professor and representative of the Biodiversity Board.

MDP on Priority Setting, Monitoring and Evaluation

"Priority Setting, Monitoring and Evaluation" was the Management Development Programme conducted for 25 participants from 4 to 8 Aug 2014. The partici-

pants comprised of Principal Scientists, Senior Scientists, Professor and Head of Departments, Associate Professors and Assistant Professors. The objectives were to 'Orient the participants to the concepts and description of PME of agricultural research and de-

Participants of the MDP on "Biotechnology and Intellectual Property Rights" conducted from 16 to 21 Jun 2014 get together for a photograph.



velopment,' 'Equip them with techniques of PME in different areas of agricultural research and development,' and 'Discuss empirical studies and to synthesize experiences in application of PME techniques.' The core contents were 'PME in Agricultural R & D: An Overview,' 'Project Design and Management: Identifying and Prioritizing Opportunities for Designing Research Projects,' 'Project Management Techniques,' 'Monitoring and Evaluation Mechanisms,' 'Knowledge Management and Sharing,' and 'Impact Assessment.'

MDP on Consultancy Projects Management

Twentythree participants were trained in the MDP on "Consultancy Projects Management" from 22 to 27 Aug 2014. The objectives were to 'Build capacity on the processes and modalities of consultancy projects handling,' 'Expose them to monitoring and evaluation techniques,' 'Familiarize the skills towards short-term studies and 'Art of writing reports.' The core contents were 'Consultancies as a Source of Expertise Building: Experience of Consultancies to Public and Private Sector,' 'International Consultancies Experience,' 'Consulting in Social Science and Policy Research: Experiences of CRISP,' 'Managing Time and Finance in Consultancies: Operating within Rules,' 'Research and Development Consultancies for Public and Private Sectors: A Consultant's Perspective,' 'Training Impact: Experience Sharing



Participants of the MDP on "Priority Setting, Monitoring and Evaluation" conducted from 4 to 8 Aug 2014 get together for a photograph.

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Writing.' The participants were Principal Scientists, Senior Scientists, Scientists, and Assistant CTO.

Training Programme on Geospatial Knowledge Management for Sustainable Agriculture using Open Source GIS

'To introduce the concepts and applications of GIS and remote sensing in agriculture using open source GIS and related spatial technologies' was the main objective of the training programme on "Geospatial Knowledge Management for Sustainable Agriculture using Open Source GIS," held from 2 to 12 Sep 2014. There were 14 participants comprising of Principal Scientists, Senior Scientists, Scientists, ICAR National Fellow, Associate Professor and Assistant Professor. The contents were 'Geospatial Technologies in Agriculture,' 'GIS Concepts,' 'Map Projections,' 'Map Scales and Accuracy,' 'Spatial Database Design and Implementation using QGIS,' 'Remote Sensing,' 'Image Processing using ILWIS Open Source SW,' 'DSS for Insect Pests of Major Rice and Cotton-based Cropping Systems,' 'Cluster

Seen in the photograph are participants of the MDP on "Consultancy Projects Management" held from 22 to 27 Aug 2014.



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by Past Trainee,' 'Issue of IP in Consultancy Proposals,' 'Consultancy Projects in Veterinary Research,' 'Financial Aspects of Training, Consultancy, Contract Research,' and 'Consultancy Proposal

Analysis using SADIE Shell Open Source Software,' 'Land-use Cover using ILWIS Open Source Software,' 'Interpolation and Krigging for GIS Mapping,' 'Analysis of Diversity using DIVA GIS,' 'Applications of DSSAT

in Agriculture,' 'Image Analysis using Optima Software' and 'Remote Sensing Open Source Data Download.'

Training Programme on Agricultural Knowledge Management Techniques

'To upgrade the knowledge and skills of extension professionals for sharing of knowledge management process in research and extension organizations' was the objective of the training programme on "Agricultural Knowledge Management Techniques" held from 16 to 26 Sep 2014 for seven participants. The contents were an 'Overview of Knowledge Management Systems,' 'Agricultural Knowledge in the Live-stock,' 'An overview of Database

System,' 'Rice Knowledge Management Portal,' 'Dynamic Website Development,' 'Multimedia and its Applications in Knowledge Management in Agriculture,' 'Content Management,' 'Open Source Tools for Agricultural Knowledge Management,' 'ICT Role in Agriculture Knowledge Management,' 'e-Learning,' 'Geospatial Applications in Agriculture,' 'Image Processing and its Applications,' 'Technology Man-



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Participants of the training programme on "Geospatial Knowledge Management for Sustainable Agriculture using Open Source GIS," held from 2 to 12 Sep 2014 are seen in the photograph.

The participants were Principal Scientists, Scientists, Assistan Chief Technical Officer and Senior TO.

Training Programme on Advanced Analytical Tools for Social Sciences



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Seen in the photograph are participants of the training programme on "Agricultural Knowledge Management Techniques" held from 16 to 26 Sep 2014 .

ers. The objectives were 'To equip the researchers with advanced statistical tools that help in addressing complex research problems' and 'to train the participants in performing statistical analysis using software such

Participants of the training programme on "Advanced Analytical Tools for Social Sciences" held from 17 to 26 Sep 2014 get together for a photograph.



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agement and Communication,' 'Village Development Studies in South Asia,' 'Data Mining Techniques' and 'Effective Communication Skills and Communicating Science through Mainstream Media.'

A training programme on "Advanced Analytical Tools for Social Sciences" was conducted from 17 to 26 Sep 2014 for 14 participants comprising of Principal Scientists, Senior Scientists, Professors, Associate Professor and Scientific Officers. The objectives were 'To equip the researchers with advanced statistical tools that help in addressing complex research problems' and 'to train the participants in performing statistical analysis using software such as 'R' (open source) and 'SAS.' The programme consisted of a blend of lectures and hands-on exercises.

Faculty Development Programme on E-Learning

'To sensitize



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Seen in the photograph are participants of the Faculty Development Programme on "E-Learning" held from 8 to 17 Oct 2014.

appropriate statistical techniques and interpretation of the results. Data from real-life studies and simulated data were utilized to explain various statistical techniques.

MDP on Emotional Intelligence for Personal and Work Excellence

The objectives of the MDP on "Emotional Intelligence for Personal and Work Excellence"

held from 25 to 28 Nov 2014, were to 'Facilitate participants to understand their own self and personality dimensions, learn and develop emotional intelligence and strengthen the emotional orientation of participants for personal and work excellence.' There were 12 participants comprising of Principal Scientists, Senior Scientist, Dean of Postgraduate Studies and Professor. The lectures comprised of 'Types of Intelligence,' 'Self and Layers of Personality,' 'Dimensions of Emotional Intelligence,' 'Relationship Management, Mentoring and Counseling,' 'Personal and Work Excellence through Emotional and Spiritual Intelligence.'

participants on the concepts of e-learning and its practice with open source resources' was the objective of the Faculty Development Programme on "E-Learning" held from 8 to 17 Oct 2014. There were 13 participants comprising of Senior Scientists, Scientists, Associate Professors and Assistant Professors.

Training Programme on Analysis of Experimental Data

Thirtythree Principal Scientists, Senior Scientists, Scientists, Assistant Chief Technical Officer, Professors, Associate Professors and Assistant Professors participated in a training programme on "Analysis of Experimental Data," from 10 to 15 Nov 2014. The objective was to 'Orient the researchers on the basics of statistical tools and techniques.' The programme included a blend of lectures and hands-on training. Data analysis using SAS was performed using SAS foundation 9.3 and SAS Enterprise Guide. The topics covered included 'Principles of Experiments for Conducting Research,' 'Exploratory Data Analysis,' 'Introduction to SAS and Data Management,' 'Correlation, Regression and Diagnostics,' 'Analysis of Experimental Data using Basic as well as Advanced Designs,' 'Pooled Analysis,' 'Multivariate Data Analysis using Principal Component Analysis,' 'Factor Analysis,' 'Best Linear Unbiased Predictor' and 'Stability Analysis and Response Surface.' Emphasis was on analysis of data using

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During the training programme on "Analysis of Experimental Data," from 10 to 15 Nov 2014, the participants get together for a photograph.

Training Programme in Recent Trends in Bioinformatics and its Applications in Agriculture

The objective was to expose the participants to the 'Basic and advanced study of domains of bioinformatics in the field of agriculture.' There were 13 participants comprising of Senior Scientists, Scientists, Assistant Professors, Research Officer and Senior Technical Assistant. The course work consisted of lectures and hands-on exercises, including 'Database Creation and Internet

Resources for Bioinformatics Analysis,' 'Plant Genome Analysis: Assembly, Gene Discovery, Function Annotation, Computational Algorithms and Techniques,' 'Biotechnology Tools for Crop Improvement,' 'Molecular Modelling and Protein Interaction' and 'Data Mining Tools and its Applications in Agricultural Bioinformatics.' This training programme "Recent Trends in Bioinformatics and its Applications in Agriculture" was held from 2 to 13 Jan 2015.

Summer School on Recent Advances in Educational Technology

Twenty-six participants comprising of Associate Professors, Assistant Professors, Subject Matter Specialists and Programme Coordinators attended a Summer School on



Seen in the photograph are participants of the MDP on "Emotional Intelligence for Personal and Work Excellence" held from 25 to 28 Nov 2014.

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"Recent Advances in Educational Technology" from 2 to 22 Jul 2014. The objectives were to 'Bring awareness on philosophy of educational methodology and instructional technology for student-centered approach' and 'Sensitize the participants in the recent developments in educational technologies.'

The core contents were 'Principles of Teaching, Learning and Evaluation,' 'Effective Teaching Methods,' 'Learning Theories and Styles,' 'Harmonization of Learning Styles and Teaching Methodologies,' 'Student Evaluation Techniques,' 'E-learning Methods,' 'E-Content Development,' 'E-Teaching,' 'E-Evaluation Tools and Techniques,' 'Multimedia Skill Development using Different Software,' 'Hands-on-practice,'



Participants of the training programme "Recent Trends in Bioinformatics and its Applications in Agriculture" held from 2 to 13 Jan 2015 get together for a photograph.

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'Hands-on-practice,'

During the Summer School on "Recent Advances in Educational Technology" from 2 to 22 Jul 2014, participants get together for a photograph.

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Seen in the photograph are participants of the “Short Course on Teaching Competency Enhancement through Innovative Methods” held from 18 to 27 Feb 2015.

are a useful resource material for ICAR-NAARM programmes.

Agribusiness Management Education in India

Thirtyone participants debated on the status of “Agribusiness Management Education in India” thro’ six ses-

‘Personality Development of Teachers,’ ‘Role Perception of Teachers’ and ‘Motivation of Teachers for Motivating Students.’

Short Course on Teaching Competency Enhancement through Innovative Methods

There were 22 participants consisting of Associate Professors and Assistant Professors in the short course held from 18 to 27 Feb 2015. The objectives were to ‘Enhance the competency of the faculty through innovative teaching methodologies and develop the capacity in technology-mediated pedagogical skills.’ The contents were ‘Basics of Teaching and Learning,’ ‘Student Centered Learning,’ ‘Innovative Teaching Methods: Student Centered Teaching Methods,’ ‘Teaching with Technology,’ ‘Effective Presentation Skills,’ ‘Micro-teaching and Lesson Plan Preparation,’ ‘Accessing Educational Resources for Teaching Effectiveness,’ ‘Introduction to E-Learning and LMS’ and ‘Student Motivation, Mentoring and Counselling.’

Workshops

These programmes provide a forum for interactions on policies in agriculture, agricultural education and related sectors on a national and international level. The recommendations of these workshops and seminars

During the workshop on “Agribusiness Management Education in India” held from 12 to 13 Jun 2014, the participants get together for a photograph.



sions from 12 to 13 Jun 2014. The sessions were ‘Attracting Quality Students,’ ‘Curriculum and Pedagogy,’ ‘Internship and Placement Policy,’ ‘Faculty and their Training Needs,’ ‘Networking of Partnerships in ABM Education’ and ‘Business and Entrepreneurship Orientation.’ The participants were from the ICAR, SAUs, Public Sector and the Private Sector. The output of the deliberations were used in the ICAR-NAARM educational programmes and research projects of Agribusiness Management Education.

Technology Management for Researchers

A total of 12 Principal Scientists, Associate Director of Research, Senior Scientists and Scientist were trained in a workshop on “Technology Management for Researchers,” from 19 to 23 Aug 2014. The objectives were to ‘Provide an overview of the key concepts and the legal framework of technology management,’ ‘Develop a practical understanding of application of technology management principles such as technology commercialization, technology marketing, techno-entrepreneurship, new product development, technology prod-



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During the workshop on “Technology Management for Researchers,” from 19 to 23 Aug the participants get together for a photograph.

to 11 Sep 2014. There were 19 participants comprising of Principal Scientists, Senior Scientists, Professors and Scientist ‘D,’ from the ICAR, SAUs and other Governmental organizations. The objective was to ‘Develop the skills for writing research proposals’ that can get funds from donors.

uct life cycle and pricing,’ ‘Lay the groundwork for further study in the nuances/intricacies of intellectual property rights and patents,’ and ‘Share the experience in technology and innovation management.’

Developing Winning Research Proposals

The ICAR-National Agricultural Science Fund (NASF) formerly the National Fund for Basic, Strategic and Frontier Application Research (NFBSFARA), ICAR, New Delhi sponsored a Project Development Workshop on “Developing Winning Research Proposals” at the ICAR-NAARM, from 9



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Participants of the workshop on “Developing Winning Research Proposals” held from 9 to 11 Sep 2014 get together for a photograph.

Open Access to Agricultural Knowledge for Inclusive Growth and Development

A two-day workshop on “Open Access to Agricultural Knowledge for Inclusive Growth and Development” was held from 29 to 30 Oct 2014 in association with the Global Forum on Agricultural Re-

search (GFAR). About 100 participants from the ICAR, State Agricultural Universities, other Government institutions, Non-Governmental Organizations (NGO) and representative from the private sector deliberated to improve the use of open access system. The objectives were to ‘Review the current status of open knowledge resources in agriculture in

During the workshop on “Open Access to Agricultural Knowledge for Inclusive Growth and Development” held from 29 to 30 Oct 2014, the participants get together for a photograph.

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India,' 'Identify the gaps and needs to improve open knowledge access and use,' and to 'Define the strategies for further scope with networking at national and global level.' The major recommendations were:

✧ Well defined open access policies with necessary regulations for scientific and technological information and data taking into account privacy, security of information, IPRs and career advancement policies.

✧ Action by Department of Agricultural Research and Education (DARE)/ICAR, Department of Agricultural Extension and State nodal agencies for advocacy, awareness, capacity building and use of open data and information.

✧ Broadband 3G/4G connectivity for all-India for use in e-agriculture along with e-governance, e-health, e-education and affordable data connectivity to rural areas

✧ Proactive participation at national and international level regarding standards for agriculture information and knowledge resources, developing agricultural knowledge grid, quality assurance, developing open access libraries at KVKs, institutional online repositories with central harvesting facilities, and partnerships with international platforms such as CIARD RING and creating local rings.

✧ Promoting and enabling appropriate use of mobile devices and tablet PC by farmers, producers and those involved in Agri-food chains through training

and learning such as through Farm schools and Village Extension workers.

✧ Curriculum changes such as integrating data sciences in library science and related disciplines, and informatics in agricultural and related (veterinary, animal, horticulture and fisheries) sciences at the graduate and postgraduate levels.

Training Needs Assessment

A workshop on "Training Needs Assessment" for HRD Nodal Officers of the ICAR was organized on 26 Feb 2015. There were 74 participants from 69 ICAR Institutes, three ZPDs and two representatives from ICAR Headquarters, New Delhi. The objective was to 'Evolve a mechanism to implement an annual training plan for all cadres in the ICAR.'

Sponsored Programmes

These are customized programmes conducted on demand or for sensitization by ICAR-NAARM.

Training Programme Enhancing Human Relations and Performance of People at Work at DRWA, Bhubaneswar

To 'Provide opportunities for scientists, technical and administrative personnel to understand the importance of human relations at work and to develop appropriate skills to enhance their efficiency and effec-

The participants of the workshop on "Training Needs Assessment" organized on 26 Feb 2015 get together for a photograph.

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During the sensitization programme “Technology Management in Agriculture for KVK Professionals,” from 9 to 11 Jun 2014, the participants get together for a photograph.

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tiveness’ was the objective of the off-campus programme “Enhancing Human Relations and Performance of People at Work,” at the ICAR-Directorate of Research on Women in Agriculture (DRWA), Bhubaneswar from 6 to 9 May 2014. Twentysix personnel were trained. Topics covered during the programme were ‘Personality Development,’ ‘Strategies for Performance Management,’ ‘Role Perception,’ ‘Understanding Ego States – A Need for Effective Transaction with People,’ ‘Interpersonal Relationships,’ ‘Trust Building,’ ‘Positive Reinforcement – An Experiential Learning,’ ‘An Experiential Exercise for Planning, Helping, and Performing Better,’ ‘Interpersonal Communication Skills,’ ‘Teamwork, Conflict Management,’ and ‘Stress Management.’

NAIP-BPD-NAARM Sensitization Programme

“Technology Management in Agriculture for KVK Professionals,” was the sensitization programme for 26 personnel from the Krishi Vigyan Kendras from 9 to 11 Jun 2014. The objectives were to: ‘Provide an overview of the key concepts and the framework for technology management,’ ‘Develop a practical understanding of applications of technology management’ and ‘sensitize the institutions mechanisms within NARS for technology commercialization and business devel-

opment.’ The programme was spread over three modules, namely, ‘Structuring Knowledge Transfer and Intellectual Property Regime,’ ‘Business Planning and Incubation,’ and ‘Rural Innovations and Entrepreneurship.’ The topics covered were ‘Technology Management in Agriculture: Perspectives for KVK System in NARS,’ ‘IP Management: Introduction and Overview,’ ‘Strategic Issues in management of Technology and Innovations,’ ‘Geographical Indications,’ ‘Market Feasibility Studies and Risk Management Strategies,’ ‘Case Studies on Business Plan Preparation: Hands-on Exercise,’ ‘Technology-led Entrepreneurship in Agriculture,’ and ‘Rural Technologies Up-scaling, NIF Model.’ A panel discussion on the ‘Role of KVK in Technology-led Agriculture,’ was also conducted.

Training Programme for Enhancing Human Relations and Performance of People at Work at CAZRI, Jodhpur

To ‘Provide opportunities for technical and administrative personnel to understand the importance of human relations at work’ and to ‘Develop appropriate skills to enhance their efficiency and effectiveness’ were the objectives of the four days off-campus Programme for “Enhancing Human Relations and Performance of People at Work” for the ICAR-Central Arid Zone Re-

search Institute, Jodhpur from 11 to 14 Nov 2014. There were 25 participants. The core contents were 'Personality Development,' 'Attitude, Mindset, and Work Culture: The Need for Change,' 'Strategies for Performance Management,' 'Understanding Ego States: A Need for Effective Transaction with People,' 'Interpersonal Relationships,' 'Trust Building,' 'Role Perception,' 'Positive Reinforcement: An Experiential Learning,' 'An Experiential Exercise for Planning, Helping and Performing Better,' 'Strategies for Stress Management,' 'Conflict Management' and 'Teamwork.'

Training Programme for Private Secretaries and Personal Assistants of ICAR

Twentytwo Principal Private Secretary (PPS), Private Secretaries (PS) and Personal Assistants (PA) were trained in an off-campus training programme for "Private Secretaries and Personal Assistants of ICAR," at the ICAR-Central Institute of Agricultural Engineering (ICAR-CIAE), Bhopal from 16 to 18 Jan 2015. The objectives were to 'Describe the role of the PPS, PS and PA in the organization,' 'file management,' 'interpersonal communication skills,' 'e-Governance' and 'importance of values and ethics in the governance.'

Training Programme on Technology Impact Analysis and New Methods in Extension Education

Twentyfive Professors, Associate Professors and Assistant Professors of the Punjab Agricultural University (PAU), Ludhiana were trained in an off-campus sponsored training programme on "Technology Impact Analysis and New Methods in Extension Education" at Ludhiana from 17 to 21 Feb 2015. The objectives of the training programme were to 'Orient the participants on Technology Life Cycle,' and 'Provide insights into latest innovations of technology impact analysis' thus developing core competencies of the participants with impact analysis skills in extension.

Training Programme on Extension System Management

The objectives of the off-campus sponsored training programme on "Extension System Management" were to 'Give and orientation the scientists about various

components of extension systems,' 'Provide an insight into effectively managing the emerging innovations in extension systems' and 'Impart skills on technology development, treatment and dissemination of innovations.' The programme was sponsored by the Central Silk Board, Jorhat, Assam for their 20 Scientists in grades 'B,' 'C' and 'D' of the Central Muga Eri Research and Training Institute. The programme was held from 23 to 27 Feb 2015. The contents of the lectures were 'Communicating Science through Mainstream Media,' 'Gender Sensitive Extension Management Approaches,' 'Scientific Report Writing and Presentation,' 'Scientific Report Writing and Presentation,' 'Social Media for Knowledge Management in Agricultural Extension,' 'Participatory Technology Development,' 'Group Dynamics and Team Work in Extension,' 'ICT Initiatives for Knowledge Management in Agricultural Extension' and 'Monitoring and Evaluation of Extension Programmes.'

Training Programme on PME

Twenty Scientists of levels 'C' and 'D' of the Central Muga Eri Research and Training Institute, Central Silk Board, Jorhat, Assam, were trained in an Off-campus Training Programme on "Priority Setting, Monitoring and Evaluation (PME)" from 9 to 13 Mar 2015 in Jorhat. The objectives were to 'Orient the participants to the concepts and description of PME of research and development including techniques, empirical studies and application of intellectual property rights and technology management.'

Orientation Programme for KVAFSU, Bidar

Thirtyfour newly recruited Assistant Professors of the Karnataka Veterinary, Animal and Fishery Sciences University (KVAFSU), Bidar were trained by ICAR-NAARM at Mangalore from 27 Oct to 1 Nov 2014. The orientation included lectures on the 'Role of ICAR in Promoting Agricultural Education in India,' 'Principles of Learning and Teaching,' 'Personality Development of Teachers,' 'Time Management,' 'Multimedia Tools and Techniques,' 'Digital Content Creation using Multimedia Tools,' 'Communication and Listening Skills,' 'University Statues and Acts,' 'University Rules, Regu-



Seen in the photograph are participants of the Foundation Courses conducted for the Sri Venkateswara Veterinary University, Tirupati, from 11 Nov to 1 Dec 2014 (above) and from 3 to 23 Dec 2014 (below) at SVVU, Hyderabad.

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lations and Administrative Procedures,' 'Publication and Technology Development in Universities' and 'e-Teaching Techniques.'

Foundation Course for SVVU, Tirupati

The Sri Venkateswara Veterinary University, Tirupati, sponsored two 21-days Foundation Courses for 79 newly recruited Assistant Professors and Scientists. These were conducted by ICAR-NAARM from 11 Nov to 1 Dec 2014 and from 3 to 23 Dec 2014 at SVVU, Hyderabad. The core contents were 'Basics of Learn-

ing-Teaching,' 'Effective Communication Skills,' 'e-Learning,' 'Time Management,' 'Scientific Writing,' 'Academic Regulations and Examination Pattern,' 'Library e-Resources,' 'Digital Content,' 'IP Regime and Agricultural Research,' 'Statistical Techniques in Animal Science Research,' 'Purchase Procedures Inventory Management,' 'Web Design,' 'University Acts, Statutes and Authorities,' 'General Service Conditions,' 'Conduct Rules and Vigilance' and 'TA/DA Rules and Provisions for Advances.'

Research

THE research activities of the Academy cover a wide range of thematic areas and are organized in several research projects. The projects are grouped under six priority areas:

- ✧ Enhancing leadership and governance.
- ✧ Science and technology for innovation and sustainable development.
- ✧ Information and communication Management.
- ✧ Extension systems management.
- ✧ Education systems management.
- ✧ Agribusiness management.

The research projects involve active engagement with key stakeholders not only in the institutional level (ICAR institutions, State Agricultural Universities, NGOs, private sector industries and farmer producer companies) but also in the individual levels (scientists, faculty, farmers, business executives and others). These are supported by institutional and competitive grants from various agencies. Besides several journal papers, books and other types of publications, the research has led to policy support for the ICAR and NARS, and to valuable resource materials for enhancement of capacity building programmes of ICAR-NAARM.

Quality of Work Life in National Agricultural Research System

Organizations recognize the critical importance of overall development and happiness of employees and reduced stress levels on professional performance. Therefore, leaders in organizations have started to focus on improvements in work life aspects of individual development and overall quality of work life, without jeopardizing the institutional objectives and economic health. The various factors that influence the quality of work life, and its status among scientists and faculty in the ICAR and SAUs, were assessed.

The key dimensions that determined the quality of work life in National Agricultural Research System were grouped into six categories, namely, general well-being (GWB), job career satisfaction (JCS), control at work (CAW), working conditions (WCS), home-work

Interface (HWI) and stress-Induced quality of work life (SAW). The methodology developed by Easton and Van Laar (2012) was adapted for the study. Data were collected from 104 respondents using a pretested survey instrument to assess the quality of work life in these six dimensions. Statistical analysis was carried out using the SPSS software to assess the correlations among different dimensions of quality of work life. The responses (65%) indicated that perception on GWB and JCS were highly satisfactory, whereas, the HWI and CAW were highly satisfactory for about 40%. Stress Induced quality of work life and overall quality of work life were perceived to be high only among 25% respondents. There was no differentiation with age, gender and experience on the dimensions of quality of work life. Results of cluster analysis to group the various dimensions indicated that HWI, WCS and CAW were closer to form a group. Similarly, the variables SAW and overall QWL formed another group. Job Career Satisfaction (JCS) had no association with other variables.

Interpersonal Relationships in ICAR and their effect on Organizational Performance

Interpersonal relationships affect performance. Good interpersonal relationships among employees in an organization help in attaining organizational objectives within specified time periods. Interpersonal relationships at work are mainly governed by personality traits and other psychological working conditions. Data on interpersonal relationships and personality types of people were collected through a questionnaire from 694 respondents from NARS. These included scientists and participants in the CBP at ICAR-NAARM. Myers-Briggs Type indicator and FIRO-B instruments were used. The data was analyzed for three incompatibilities: originator compatibility (degree to which individual needs are complementary; one per degree to which one individual's expressed behaviour matches another's wanted behaviour), reciprocal compatibility (one person expresses as much behaviour as what the other person wants, initiates or dominates

and the other prefers to be submissive), and interchange compatibility (one person sends out several emails and the other feels inundated because he or she prefers a single communication; or one person does not send as many messages as the other expects). Analysis of a smaller sample of data collected indicated that originator incompatibility, reciprocal incompatibility and interchange incompatibility exist with reference to inclusion, control and affection among the staff. For inclusion, 60% of staff members had both originator and reciprocal incompatibility while only 8% had interchange incompatibility with more than 50% of the other staff members. For control, about 8% showed originator, 16% reciprocal and 14% interchange compatibilities. For affection, about 3%, showed originator and reciprocal

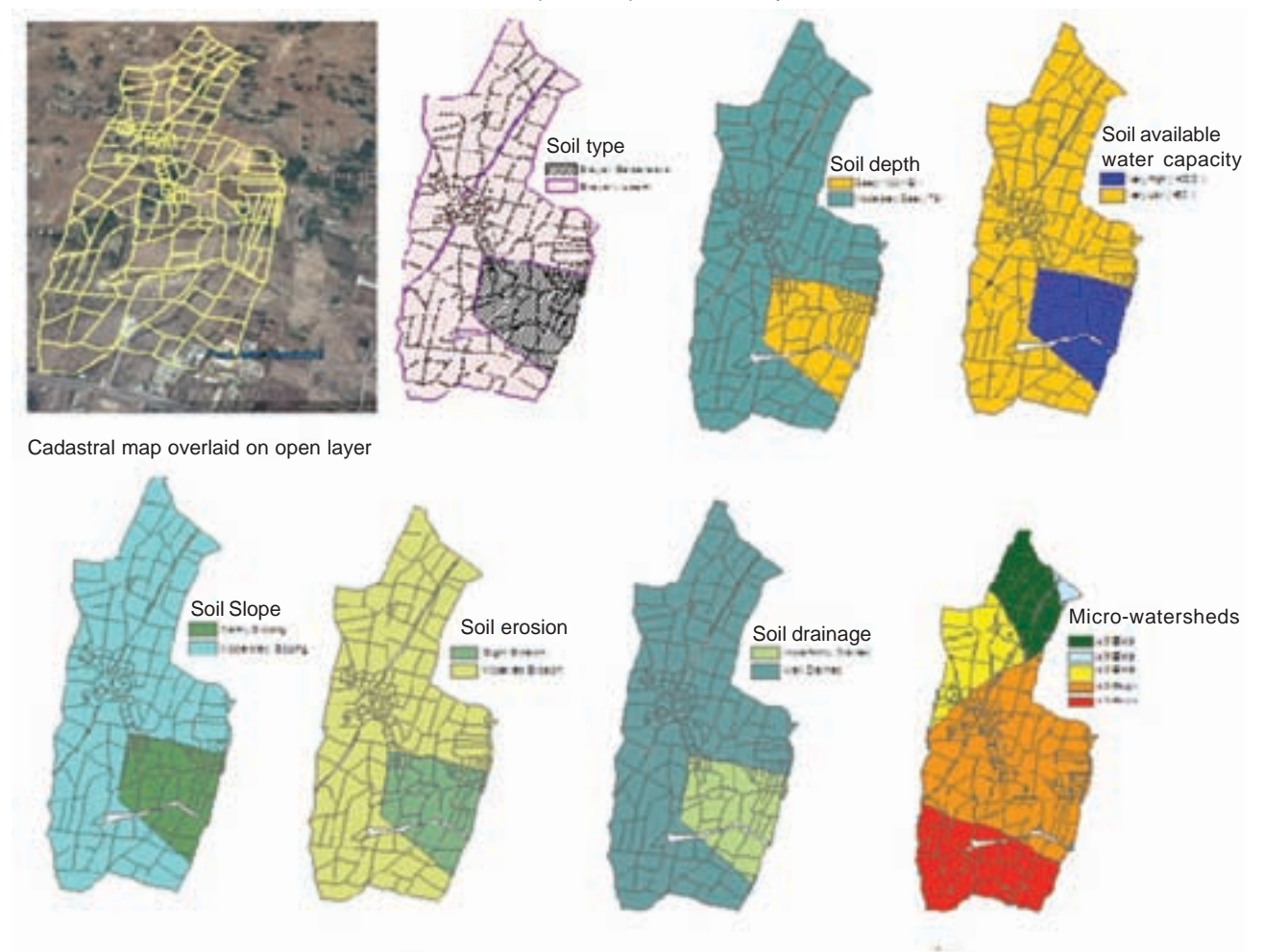
incompatibilities, and 14% had interchange incompatibility.

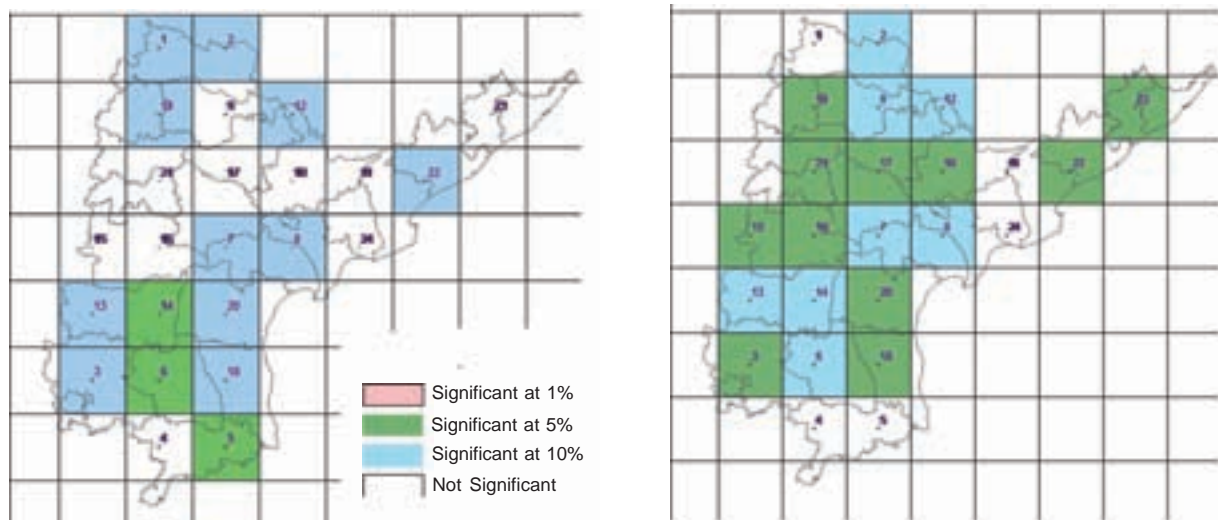
Geospatial Knowledge Systems for Research Policy and Management for Sustainable Rural Livelihoods Security

Geospatial knowledge management to characterize livelihood systems: The objective was to design a web-based geospatial village knowledge system for sustainable livelihoods security. A geospatial database was developed to characterize the resources and livelihood systems in Tallasingaram village in Nalgonda district of Telangana (adopted by ICAR-NAARM for village development studies).

Geospatial knowledge management to address climate

Spatial data layers in Tallasingaram village geospatial information system. The map is for representation only.





Significance of trends in maximum temperature in November for climate grid cells of Andhra Pradesh and Telangana during 1969–90 (left) and 1991–2005 (right). The map is for representation only.

change uncertainties: The objective was to design a climate knowledge system (CKS) to manage complex flow of data and information from climate data sources to agricultural scientists. This included finer spatial scales and precise temporal scales. This enabled insights into local and regional climate risks to design and manage climate smart and resilient crop, livestock and livelihood systems. This study focused on climate data series at two spatial scales: IMD data of 1° latitude \times 1° longitude grid, and AVHRR data of resolution of 1 km^2 . This finer spatial scale information would permit decision-makers to assess the local potential effects of climate change on specific crop, livestock or livelihood systems.

Analysis of climate time series at 1° latitude \times 1° longitude grid for Andhra Pradesh and Telangana: The 1° latitude \times 1° longitude grid climate database of 1969–2005 developed in previous years was used to extract and map data for Andhra Pradesh and Telangana for grid-based analysis. The time series was divided into two periods, namely, 1969–90 (baseline climate) and 1991–2005 period (current climate) to detect changes in trends in key climate variables. Trends in monthly, seasonal and annual maximum and minimum temperature and rainfall were assessed and mapped. This was based on the Mann-Kendal test statistic for significance and Sen's method for trend estimate, for all grids of Andhra

Pradesh-Telangana for the two periods. This will permit more spatially and temporally resolved understanding of climate change effects in the two regions.

Analysis of AVHRR data to derive NDVI and land surface temperatures (LST): Advanced very high resolution radiometer (AVHRR) data permit estimation of NDVI and LST at a spatial resolution of 1 km , and finer time resolution than other climate data. Daily maximum cloud free NOAA AVHRR data for the region covered by Andhra Pradesh and Telangana were downloaded from the satellite active archives. The normalized difference vegetation index (NDVI) was derived for the available images. Several algorithms were tested for the estimation of LST using the NDVI images. The Sobrino Algorithm was identified as more suitable for use with the AVHRR data for the regions studied. The LST images were derived for several periods using this algorithm.

Development of PME Tools for ICAR Institutes

Priority setting, monitoring and evaluation (PME) of research projects, overseen by PME cells in institutions of ICAR, is a key aspect of research governance. Despite the PME cells being in existence for several years, the processes of PME adapted in various institutions have been largely subjective and arbitrary. There has been a long felt need for making the PME processes

more objective and accountable. This project, carried out in collaboration with the International Food Policy Research Institute (IFPRI), addressed this need by designing a structured framework and guidelines for PME decision support at various levels of the organization. The framework is compatible with the organizational structure of institutional management in ICAR.

Guidelines for priority setting of research projects: Evaluating research project proposals, setting priorities among them and ensuring that these are in line with the institutional vision, and mission (and EFC for institutional funding) is a key responsibility of PME cells. A background concept note and draft guidelines on PME process were developed and validated through a number of brainstorming workshops and discussions with various groups in ICAR. A checklist of guidelines was finalized for scoring of research projects to prioritize among them within the institutional framework. The checklist gets activated, once a team of scientists submits a research project proposal in the approved formats (RPP-1).

Guidelines for monitoring and evaluation of research Projects, setting targets for M&E: Monitoring and evaluation (M&E) of project progress are generally on initially planned attainable values for various indicators. Thus, it is important that the Principal Investigators take great care in setting initial values and targets for each year of the project. Although, a project may have a number of activities and associated targets, the PI may identify targets for a few key outputs each year that would best reflect the work done and achievements made. The success of M&E depends on the PI in identifying specific targets for work done (such as procurement, installation, data collection and experiments) and some targets for quality of work/achievement (quantifiable indicators on performance such as publications and variety released). These indicators' dependent targets are to be critically examined by the PME Cell.

Evaluation of research projects: This depends on the nature of the research project. For basic and strategic research projects, desk, scoping, pre-project assessment may be adopted. In this case the key parameters are identified through review of literature. These are basi-

cally the lab data or field experiment data of prior research. What is needed to evaluate in the project is to report any significant change in the key benchmark parameters. For applied or action research projects, the assessment is based on field evaluation. Field data are collected through interaction with stakeholders (sample population) to assess the value of the research results to them.

The PME guidelines developed in the project have since been placed on the ICAR web site (<https://www.icar.org.in>) for further validation by the various stakeholders before institutionalizing them in the PME cells.

Implementing Agricultural Science and Technology Indicators Data Collection and Policy Analysis in India

This project forms part of an ongoing updating of the database on agricultural research and development indicators, outputs and performance of public and private research organizations; educational institutions and non-profit organizations in the NARS in collaboration with IFPRI's Agricultural Science and Technology Indicators (ASTI) project. The primary objective is to collect data on human resources, financial resources, research focus, research and development outputs, student population and profile and to develop a policy level understanding in the national agricultural research and development system. The results are expected to be useful for informed decision making processes on investments in agricultural research and development. Based on the template from IFPRI's ASTI, portal, two questionnaires were standardised for the Indian NARS through an initial pilot study done at two institutions. This was followed by a brainstorming workshop conducted on 17 Nov 2014 at ICAR-NAARM that resulted in the finalization of customized questionnaires for ICAR institutes and SAUs.

Development of a Decision Support System for Technology Management

Technology valuation is central to intellectual property protection, licensing or other means of technology transfer and management. It is, therefore, critical for institutions of NARS to have in place procedures for



Stages of commercialization of IP and technology in institutions of NARS.

Answer choices	Responses (%)
Technology developed: No IP Protected	36.36
Patent filed, but yet to be commercialised	18.18
Patent not filed, but commercialized	9.09
Patent filed and commercialized	27.27
Patent granted and commercialized	9.09
Patent granted and not commercialised	0

realistic valuation of technologies developed through investments in research. To assess the current state of technology development, valuation and commercialization in institutions of NARS, a survey instrument was designed using the on-line platform ‘Survey Monkey.’ The instrument was sent to 1,826 scientists, inventors in various research organizations of the ICAR, Council for Scientific and Industrial Research (CSIR) and SAUs for collecting data on status of technology. Information sought to be collected included type and category of technology, state of IP protection, cost of development, life, licensing arrangements, competitors and expected sales volume.

A generalized framework to value intellectual assets and technology was developed to provide guidelines for decision-support for technology commercialization in institutes of ICAR and in the NARS. The pyramid type valuation framework comprises of four different levels, namely, ‘Foundation level,’ ‘IP profile level,’ ‘Methodology level’ and ‘Solution or deliverance level.’ The framework and the valuation processes at the four levels were documented in a technical paper on “Intellectual Property and Technology Valuation” prepared for the IP&TM unit of the ICAR, New Delhi, for use in its institutions. The paper details a 10 step-protocol for valuation of an IP or technology developed by the institutions of the ICAR or the SAUs.

Based on the above guidelines, four novel ICAR technologies, ‘Chitosan production process,’ ‘Production of ZINSOL – Zinc solubilising bacteria,’ ‘Development

of a self-propelled vertical conveyor reaper (VCR) for rice cultivated in wet alluvial soils’ and ‘FMD diagnosis kit,’ were evaluated and documented as technology management case studies.

The methodology and protocols were also applied to value two new ICAR technologies for the ICAR Company, Agrinnovate India Ltd. These were for:

ICAR-Project Directorate on Foot and Mouth Disease (ICAR-PDFMD), Mukteshwar, Uttarakhand: Four newly developed FMD diagnostic kits (LPB Elisa kit, Multiple NSP DIVA kit, Multiplex PCR kit for FMD serotyping and Semen PCR kit), licensed to M/s Arsh Biotech Pvt Ltd, Delhi.

ICAR-Indian Institute of Natural Resins and Gums (ICAR-IINRG), Ranchi: Production of aleuritic acid from seed lac.

IP Management and Transfer, Commercialization of Agricultural Technology

The project is funded by ICAR under its Intellectual Property and Technology Management Units Scheme. Using a standardized technology search strategy, a database of 2,000 technologies developed in the agricultural research institutes of ICAR during the last decade was prepared. Diverse sources included institutional websites, annual reports, newsletters and publications. Data from the intellectual property portfolios was sourced from national, international and paid patent and business databases. The retrieved results were then validated with the websites for the ICAR institutes and also the records provided by ICAR-ITMU wing. Eight hundred and fifty one of 2,000 technologies were found to be IP-enabled. A detailed patent landscape study of technologies in the specific domain of genetic engineering technologies in crop, animal and fisheries sciences was carried out with an objective to understand emerging research and development trends in these domains.

Providing facilitation and support services for intellectual property and technology management to key stakeholders of NARS is a key component of the project. Under this component following services were provided:

Prior art search services: These services were provided to several ICAR institutes, SAUs, KVKs and grassroots

IP services facilitated by the ITMU project at ICAR-NAARM.

IPRs	Application/Registration number/Diary number and date of filing	Name of Innovation/ Technology/ Product/ Variety	Remarks
Patent	2132/CHE/2014; 28 Apr 2014	A multipurpose gas oven for baking, cooking and grilling purposes	Filed
Patent	2399/CHE/2014; 14 May 2014	Balanced mineral feed composition to enhance the reproductive efficiency and productivity of dairy animals	Filed
Patent	903/CHE/2014; 24 Feb 2014	<i>P. mondon</i> Histone 3 promoter driven antisense constructs of WSSV ORFs (VP24 and VP28) as protection treatment against WSSV infection	Filed
Copyright	42799/2014-CO/SW; 18 Feb 2014	GIS-based Decision support system for recommending retail outlet locations: Software	Registered
Copyright	45962/2014-CO/L; 2 Apr 2014	Training management Information system: Software(TMIS)	Registered
Copyright	45964/2014-CO/L; 2 Apr 2014	Information system for AICSIP: Software	Registered
Copyright	45967/2014-CO/L; 2 Apr 2014	Computer based Training software "E-learning module on village transect: A-Participatory Rural Appraisal tool for agricultural and rural marketing research	Registered
Copyright	45968/2014-CO/L; 2 Apr 2014	Decision support system for water quality: Software	Registered

innovators. The invention disclosures facilitated included those for processes and products for novel foods, biopesticides, harvesters, and sensory equipment for pest control.

IP facilitation services: Filing for patents and copyrights was facilitated for several clients (ICAR, SAUs and grassroots innovators) in the various IP offices.

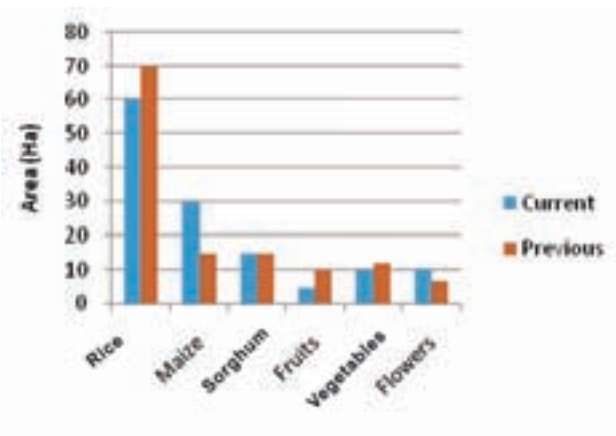
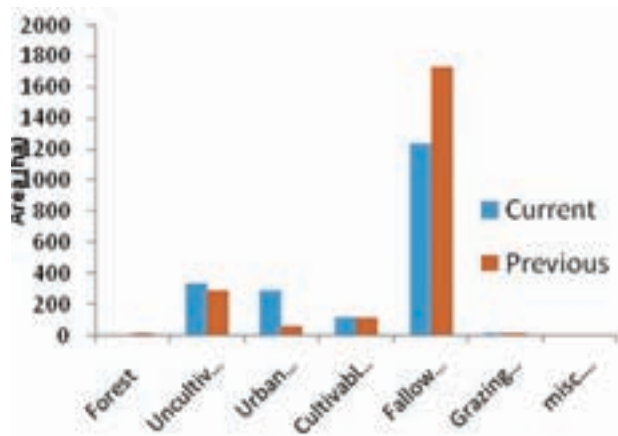
Accounting Framework for Water-energy-GHG Emission Nexus in Peri-urban Agriculture

Jukal village in Ranga Reddy district and Lingotam village in Nalgonda district, of Telangana, where peri-urban agriculture is practiced were selected, in consultation with the officials of State Department of Agriculture. Data on climate, land-use and cropping pattern,

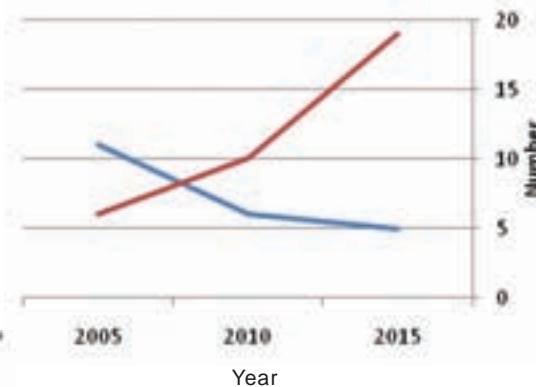
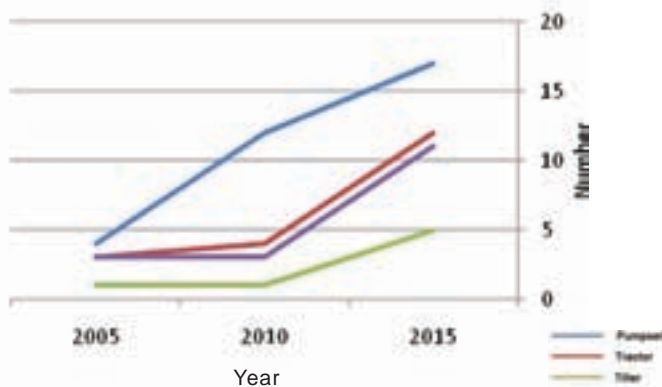
agriculture production and productivity were collected both on macro- and micro-scale and analyzed. Graphs and charts were generated for changes in rainfall variability, distribution, land-use and cropping pattern. The change in energy use and extent of change in GHG emission was also studied using empirical formulae. The results obtained may be utilized for prediction of change in land-use and cropping pattern to climate change and urbanization in peri-urban areas using extrapolation methods.

Agricultural Sustainability in Major agro-ecosystems

The activities of the project were grouped into Estimation of agricultural sustainability indices and Esti-



Jukal village: Change in land-use and cropping pattern.



S. Lingotam village: Change in energy-use and water source.

mation of ecosystem services in rainfed and irrigated ecosystems.

Sustainability indices: A comparative assessment of agricultural sustainability indices was made for the different States of India. The estimation of the sustainability index is based on the Human Development Index of the UNDP and an adaptation of the method proposed by Hatai and Sen (2008). Indicators for the three dimensions of sustainability, namely, ecological, economic and social indicators were estimated for 2001 and 2011. The overall agricultural sustain-

ability index was estimated as the mean of the three component indices. For 2001, Himachal Pradesh was in first position in agricultural sustainability ranking, followed by Punjab, whereas, Bihar, Uttar Pradesh and Jharkhand were in the last three ranks. In 2011,

Ecosystem services of rainfed and irrigated agroecological systems in Godavari districts and Mahbubnagar districts.

Type of ecosystem services	Godavari districts		Mahbubnagar
	Uplands/rainfed	Command (irrigated)	Rainfed
Provisioning services	97,481 (81)	105,229 (78)	39,560 (76)
Regulating services	13,598 (11)	16,550 (12)	6,270 (12)
Habitat	5,100 (4)	6,600 (5)	3,450 (7)
Cultural services	3,960 (3)	6,660 (5)	2,530 (5)
Total ESS	120,139 (100)	135,039 (100)	51,810 (100)

Figures in parenthesis indicate ESS (%) with regard to the total.

Agricultural Sustainability Index for States of India: 2001 and 2011

State	2001		2011	
	Index	Rank	Index	Rank
Andhra Pradesh	0.56	4	0.54	4
Assam	0.43	11	0.42	11
Bihar	0.25	19	0.14	19
Chhattisgarh	0.49	9	0.41	12
Gujarat	0.39	14	0.44	10
Haryana	0.55	5	0.53	5
Himachal Pradesh	0.64	1	0.64	1
Jharkhand	0.32	17	0.33	17
Karnataka	0.5	8	0.45	9
Kerala	0.54	6	0.61	2
Madhya Pradesh	0.41	12	0.35	15
Maharashtra	0.46	10	0.52	7
Orissa	0.4	13	0.38	13
Punjab	0.59	2	0.55	3
Rajasthan	0.36	16	0.34	16
Tamil Nadu	0.53	7	0.52	6
Uttar Pradesh	0.3	18	0.25	18
Uttarakhand	0.57	3	0.5	8
West Bengal	0.37	15	0.38	14

Himachal Pradesh had the first rank, followed by Kerala in second and Punjab third. The last three ranks were retained by Bihar, Uttar Pradesh and Jharkhand, as in 2001. A statistical analysis of the sustainability indices for the two periods indicated that there was no significant difference between the two years across most states. There was some decrease in the SI value for Bihar and Chhattisgarh, whereas, in Kerala and Maharashtra there was a significant rise in the SI values. In general in regions with better endowed natural resources

(Himachal Pradesh, Punjab and Kerala), agricultural sustainability was higher.

Value of ecosystem services: The value of ecosystems services was estimated for districts of East Godavari, West Godavari and Mahbubnagar of Andhra Pradesh representing irrigated ecosystems and rainfed ecosystems. The valuation indicated that the irrigated agriculture agro-ecosystem gave the highest ESS of ₹135,039/ha/year than the drylands of the delta districts (₹120,139) and rainfed agriculture in semi-arid areas (₹51,810) of undivided Andhra Pradesh.

Information System for All-India Coordinated Research Project on Vegetable Crops

The Information System developed under NAIP for managing multilocational experiments of the All-India Coordinated Sorghum Improvement Project (AICSIP) was adapted to the All-India Coordinated Research Project on Vegetable Crops (AICRP-VC), Varanasi. The required changes in the design of the AICSIP Information System were identified based on examination of

past experimental designs, data, methods of analysis and reporting, and interactions with the Project Coordinator. Information for the master tables (such as crops, observations to be collected with units) was collected from the scientists of the AICRP-VC. The information was scrutinized before assembling into a structured database. The database also includes the list of users, locations and other details. A new website and interface was created for interactive data input and management, tested and hosted at <http://www.iasri.res.in/aicrpvc>.



Scan the code with your smartphone to view the Information System developed for AICRP-VC, Varanasi

Evaluation of Collaborative Communication Tools in Online Environment

AHP Analyser: A user friendly online software named ‘AHP Analyser’ was developed, which makes the AHP process for research prioritization simple



Scan the code with your smartphone to view the AHP Analyser.



Scan the code with your smartphone to view the institutional digital repository of resources.

online collaboration. Analytic Hierarchy Process (AHP) is a multi-criterion group decision making tool, where decisions are made on the basis of pair wise judgment values provided by the peer group on a fundamental scale. The ranking or prioritized options were identified using various equations and calculations. The usefulness of the tool in priority setting or ranking of project options was validated with 250 ICAR-NAARM trainees during 2014-15. The tool for the AHP in ICAR-NAARM is accessible from a web link

(<http://www.ahpanalyser.naarm.org.in>).

EPrints: An institutional digital repository of resources was created using open source software EPrints as an online platform. One hundred documents were uploaded. The repository is also accessible through the NAARM website (<http://www.eprints.naarm.org.in>). A document 'EPrints@naarm: Digital Repository Training Manual' was published and distributed.

Knowledge Platform for Farmers

The objective is to build a knowledge-sharing platform for farmers in the ICAR-NAARM adopted villages of Tallasingaram and S. Lingotam. A previously developed integrated ICT model for participatory knowledge needs assessment was used for assessing present knowledge gaps in crop management, identifying organizations for providing content and assessing media usage, appropriate content formats, and priorities to arrive at a design for the knowledge sharing platform for the selected villages.

For knowledge needs assessment, interview schedules were designed for major crops, cotton, rice and pigeonpea on land preparation, sowing, crop produc-

tion, crop protection, harvest, storage and post-harvest aspects. Data was collected from 254 sample respondents (108 from Tallasingaram and 146 from S. Lingotam, comprising of 30% of total households) through interview schedules designed for the needs assessment and for media use research. Focused group discussions on crop production, livestock production and livelihoods, were also organized.

The major problems in crop production identified by the participatory needs assessment process were:

Crops: Pest management of cotton, rice and pigeonpea, water scarcity, poor quality of irrigation water.

Livestock: Poor breeds and health of dairy animals, scarcity of green fodder and high cost of concentrates.

The following institutions were identified for knowledge sharing: KVK, Kampasagar of PJTSAU for information on location specific technologies together; ICAR-DOR for information on oilseeds technologies and cotton; ICAR-DRR for providing improved rice varieties, demonstrations of technologies and information on rice crop management; ICRISAT for improved pigeonpea production technologies; ICAR-CRIDA for technologies and improved implements for rainfed agriculture; ICAR-PDP for improved poultry technologies; and Pratistha Industries for bio-fertilizers and bio-pesticides demonstrations. The AICRP on Home Science was identified for homestead products, gender sensitive health, hygiene and nutrition security technologies and entrepreneurship development; NRSC for remote sensing data for the knowledge platform; CDAC for information dissemination through Vikaspedia; and DHAN foundation for community development were identified as key participants for the knowledge platform.

All farmers in the survey had used television, and more than 96% used mobile phone to access agriculture related information. Use of newspaper was 13% in Tallasingaram and 27% in S. Lingotam. In Tallasingaram village, farm magazine (Annadata) was also used to gain knowledge of crop management. Except for one farmer in the survey, none had used a computer for any purpose. Radio was not preferred in both villages for this purpose. The survey on preferred me-

Courses with enrolment of more than 30,000 as potential for MOOCs in agricultural education.

Course	Major disciplines ¹	Number of disciplines	Enrolment number of students
Entrepreneurship development and communication skills	All	9	55,039
Introduction to computer and applications	All	9	55,039
Business Management	A,H,F,V,DT,FT,E	7	51,303
Economics	A,H,F,V, Fi, DT, FT,HS	8	50,016
Extension education	A, H, F, V, Fi, DT, FT, HS	8	50,016
Environmental Science	A,H,F,V,F,T,E,HS	7	48,220
Biochemistry	A, H, F, V, Fi, DT, FT	7	46,322
Fundamentals of microbiology	A, H, V, Fi, DT, FT	6	42,628
Statistics	A, H, F, V, Fi, DT	6	40,422
Principles of Genetics	A, H, FT, V, Fi	5	34,522

¹A: Agriculture; H: Horticulture; F: Forestry; V: Veterinary; Fi: Fisheries; DT: Dairy Technology; E: Engineering; FT: Food Technology; HS: Home Science.

dia for communication of agricultural information indicated that in both S. Lingotam and Tallasingaram, television was followed by cell and newspaper as the preferred media. Therefore, digitized content sharing may be more through mobiles with greater preference for video format followed by voice or textual formats.

Based on the needs assessment, prioritization and knowledge gap analysis, vernacular content modules were developed for the major crops, cotton, rice and pigeonpea, as well as for dairy management. The database of the farming community to link their cell numbers with the digitized cadastral maps of the villages is also being developed.

Technology Enhanced Learning in Agricultural Education

Based on the undergraduate courses in agricultural education listed in the 'Report of Fourth Deans Committee on Agricultural Education in India,' a semantics based methodology was developed to identify courses

with potential to be hosted on a MOOCs platform. Matrix and Venn diagram methods were used to identify courses that are common to most major disciplines, overlap with post graduate courses and have potential for high (> 30,000) student intake.

Psychometric Assessment of Faculty Members of Agricultural Universities for Developing Perspective HRD Plan

The aptitude and attitude for teaching and research, and personality traits among the faculty of SAUs were assessed based on a survey from Apr 2013 to Mar 2015. The profiling of 500 faculty members of SAUs was done using standard psychometric tools, namely, teaching aptitude test (TAT), attitude scale towards research (ASTR) and Myers-Briggs type indicator (MBTI). Teaching aptitude was "Above Average" for 55.4% and was "average" to "low" for 28.8%. Research aptitude was "moderately favourable" for 38.8% and "unfavourable" for 21.8%. The dominant personality type preferences

of faculty members were extroversion (65.6%), sensing (67.2%), thinking (54.6%) and judging (86.6%). ESTJ was the dominant personality type (23.2%) followed by ESFJ (16.6%), ENTJ (11%), ISFJ (10.2%) and ISTJ (9.4%).

Feasibility Framework for Social Media Adoption in NARS

An exploratory research design was adopted to investigate the use of social media among 150 randomly selected teachers, scientists and extension specialists of NARS to assess their potential use in education, research and extension. Among the various social media tools, Facebook, Google+, MySpace, LinkedIn, Youtube, Blogs, Wikis, Twitter and Whatsapp, Facebook (80.67%) was the most popular, followed by Youtube (54%), Whatsapp (47.33%) and Google+ (42.67%). Use of social media for personal use (51.55%) was more than for professional use (43%) in all age groups. The average time spent on social media was 159 minutes/day through Whatsapp (92 minutes), followed by Google+ (62 minutes), Youtube (66 minutes) and Facebook (45 minutes). Young respondents (< 30 years) spent more time (180 minutes) on social media than middle and old age groups. Use of social media for teaching, research and extension was influenced by the attitude of respondents. The highly favourable attitude category used social media more effectively than others.

Agribusiness Education in NARS: Performance and Challenges

The objectives were to assess agribusiness education in India in terms of its status, desirable skill sets, demand and suitable options to improve it further. It undertook institutional assessment, nation-wide survey, brainstorming workshops and personal discussions with stakeholders. The issues covered were as growth in education, admission policies, quality of students, curriculum and pedagogy, faculty competencies and training needs, networking and partnerships, internship and placement, business and entrepreneurship orientation, quality and options to improve it.

The number of colleges in agribusiness education increased from about 15 in 1990 to 55 in 2014. Of these,

23 colleges were in SAUs and the remaining 32 in the non-SAU Universities and central institutions. The combined capacity was 3,500 graduates.

A random sample of 20 SAUs and 35 non-SAUs institutions were selected. In the sampled non-SAU agribusiness institutes, the number of students admitted ranged from 51 to 100 per batch, though the number of in-house faculty rolls was less than 10, leading to a low faculty-to-students ratio. The number of students admitted in colleges of SAUs was lower than that of non-SAUs. The course fee in colleges of SAUs for ABM education, for two years was ₹1.21 lakhs than ₹4.86 lakhs for colleges of non-SAUs. Hence, rationalizing course fee with other postgraduate courses in agriculture and allied subjects can help colleges of ABM in SAUs to attract high ranked agricultural graduates. The admission process is not uniform across the institutes. The SAUs have their own entrance tests and non-SAUs mostly rely on CAT/CMAT scores for admission along with group discussion and personal interview. The majority of the in-house faculty in non-SAUs have experience of greater than 10 years. In the non-SAUs there are more faculty (79 %) with experience of more than 10 years, a majority of the faculty in SAUs are in the Assistant Professor cadre. The minimum number of faculty needed in agribusiness management is nine, with at least one core faculty member in Human Resource Management & Organizational Behaviour, Agricultural Economics/Economics, Finance and Accounting, Marketing and Quantitative Methods. Visiting Faculty need to be drawn from industry and other business schools for some specialized areas.

ABM graduates are catalysts to link farmers with markets in the supply chain. Conjoint analysis results of the study brought out the relative importance of competencies of agribusiness graduates. Accordingly, technical competence in domain area (45%) and analytical competence (29%) emerged as the most important followed by good communication skills (9%), supportive team work (8%), result-orientated personality (7%) and strategic thinking skills (2%).

Issues in agribusiness education: Most agri-business

schools are teaching centric and low in knowledge creation through research. Faculty and infrastructure facilities are not leveraged for these courses. Some of the problems in agribusiness education are:

- * Gaps in student skill sets and competencies.
- * No standard for agribusiness education institution in the country.
- * Materials available not supportive to facilitate a variety of teaching methodologies like business games, problem solving assignments, and real time cases.
- * Most schools do not promote research, faculty and teaching material development.
- * Not enough skilled teachers available.
- * Wide disparity between market expectations and academic fulfilments.
- * Less emphasis on soft skills, which are relatively weak in the agri-graduates.
- * In most colleges ABM course is open to agri-students, but not in all.
- * Need digital access to databases, journals and books.

Promotion of agribusiness education: Necessary actions and steps to promote and strengthen agribusiness education in the country are:

- * Need for world standard institutions.
- * Institutes to expand and maintain quality.
- * International best practices for quality of programme and research.
- * More interaction with industry on curriculum and internships.
- * Need exclusive faculty development programmes
- * Post-doctoral scheme to improve quality of teaching and research.
- * Incentive to business houses for academic collaborations.
- * Competitive grants to promote research.
- * Uniform selection procedure for agribusiness programmes.

Workplace Conflict Management – Factors of Conflict and Styles of Conflict Management in the National Agricultural Research System

A conflict management style survey was carried out among 439 scientists and teachers of ICAR and SAUs

to identify which of the five standard conflict management styles (competing, collaborating, compromising, avoiding and accommodating) are prevalent. Competing was the least preferred style among scientists and teachers. Avoiding is the most preferred style. Many factors, including those related to personality issues, organizational leadership and climate and structural factors could have contributed to the high adoption of the avoiding style. Collaborating or compromising, which are the preferred styles from the organizational perspective are in medium use. Contrary to this trend, when people join to work in groups, the competing style tends to play the most predominant and negative role because the affective commitment and other group factors becoming dominant in the teams.

Various factors that lead to conflicts among scientist and faculty were identified through personal interactions. An indicative list of these includes the following: performance rating, power vested with people, publication committee, blame game, transparency in credit sharing, disrespect to system and procedures, Head-scientist-technical personnel interface, Co-PIs, scoring system, PME, right over germplasm, inter-disciplinary projects, incomplete sharing of information, ego, perceived competition, selection to higher position, work conflict, role conflict, attitude, Administration-Accounts-Scientists interface, varied commitment of people to work, lack of accountability/responsibility, and misunderstanding. Structural and inter-personal factors appear to contribute to majority of conflicts.

Development of Knowledge Management Portal for Agrobiodiversity

A database of agrobiodiversity resources in Andhra Pradesh and Telangana comprising of 139 species of cultivated crop plant was developed. This was based on data collected from farmers (301 samples), the State Departments of Agriculture, ANGRAU, ICAR-NBPGR, ICAR-DSR, NBA Reports, other ICAR Institute reports, and other published data. The database includes information on family, plant species, common name, scientific name, crop group, habitat, distributions, flowering time, seed traits, name in Telugu and economic importance of crops.

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Post-graduate Education

Post-graduate Diploma in Management-Agriculture

The PGDMA is a two year, fully residential programme approved by the All-India Council for Technical Education (AICTE). This programme is designed to prepare students for management-related careers in agriculture, food and allied sectors.

4th Batch 2012-14

The fourth batch comprising of 22 students (2012-14) after successfully completing the course were placed in major industries such as Godrej Agro-vet, Kemin Foods, PI Industries, Vasudhaika Software Solutions, Origo Commodities, ING Vysya Bank, Coromandal International, Yes Bank, United Phosphorous Ltd., Sinochem India Pvt. Ltd., M&M Rise ABD and Magteshim Agan. The average compensation was ₹6 lakhs/annum.

5th Batch 2013-15

The 23 students of the 2013-15 batch underwent their summer project at leading industries such as Origo commodities, M&M Farm equipments, NCDEX Future, Kemin foods, Kemin Foods, Reserve Bank of India, Sinochem Pvt. Ltd, Monsanto and Syngenta during May to Jun 2014. All of them were placed in major agribusiness companies such as UPL Ltd., PI Industry, Sadguru Consultancy, Dupont, NCDX and Mahindra Rise. The average pay package was ₹ 6 lakhs/ annum.

6th Batch 2014-16 Commences

The sixth batch comprising of 17 students joined the course in Jul 2014.

Post-graduate Diploma in Technology Management in Agriculture

The one year PGD-TMA is a two- semester course jointly offered by ICAR-NAARM and the University of Hyderabad, Hyderabad, in a distance learning mode. The objective is to build and further the skills of students, researchers, policy makers, intellectual property and technology transfer practitioners as professionals to enable them to handle successfully the intellectual property and technology management assignments in agriculture and related enterprises.

PGD-TMA 2014

The contact programme for the first semester was held from 7 to 9 Aug 2014 and for the second semester from 13 to 15 Dec 2014. This was followed by the term-end examinations in the Centre for Distance and Virtual Learning, University of Hyderabad . Based on recommendations of the NAAC, the Post-graduate Diploma in Technology Management in Agriculture programme from the Academic year 2014-15 was imparted online. The online access titled 'Professional Virtual Community and Learning Management System (PVC-

LMS)' developed by the Tata Consultancy Services (TCS) was launched jointly by the Dr E. Haribabu, Pro-Vice-Chancellor, University of Hyderabad, Hyderabad and Dr D. Rama Rao, Director, ICAR-NAARM, Hyderabad, in the presence of Shri Sridhar Sivalenka, Regional Platforms Manager, Tata Consultancy Services on 7 Aug 2014. The PVC-LMS has resource materials including books, presentations, videos and write-ups.



Seen in the photograph are students of the PGDMA Batch 2013-15 (above) and 2014-16 (below).



ICAR-NAARM Photolibrary

RAC, IMC, Academic Committee, IRC, SOC Meetings

Research Advisory Committee

The 14th meeting of the Research Advisory Committee (RAC) of ICAR-NAARM was held on 24 Apr 2014 under the Chairmanship of Dr Mrthuyunjaya. The other Members present were Drs T.V. Rao, Sivakumar, A.S. Rao, Najma Akthar, Shri Venkata Ramana Reddy and S.L. Goswami. Dr R. Kalpana Sastry was the Member-Secretary. After the discussion on the progress of the projects, the RAC gave the following major recommendations: Expertise of the RAC members may be utilized in educational and capacity building programmes in terms of guest faculty and consultancy; During discussion on agenda items, members strongly felt that if NAARM has to effectively discharge its mandated functions as a unique institution in ICAR, as recommended by QRT, it has to be provided with special status in terms of flexible rules and more functional autonomy.

In this context, Chairman suggested that RAC members would be willing to attend a meeting with Secretary (DARE) and DG, ICAR, Senior officials at ICAR Headquarters, DDG (Edn) and ASRB officials. This meeting may be planned at New Delhi with an objective to impress ICAR Headquarters of the progress made so far in implementing the recommendations of the 6th QRT and the ICAR/DARE support needed for its full implementation; RAC would impress upon ICAR for additional/ revised budget for implementing the recommendations suggested by QRT; It was suggested that divisional meetings may be planned with individual members of RAC for full understanding and fine-tuning the activities of each Division. All members unequivocally expressed their interest and commitment to support with their expertise in relevant area. NAARM may chalk out a suitable plan to implement this recommendation in consultation with the concerned RAC

The 14th meeting of the Research Advisory Committee (RAC) of ICAR-NAARM was held on 24 Apr 2014.

M. Ravi



members; The structure and stature of the present PGDMA (Agriculture) needs to be enhanced to a MBA in affiliation with a national university like University of Hyderabad. This would also allow the introduction of Ph.D. programme in management at NAARM as recommended by QRT.

Institute Management Committee

The 51st Institute Management Committee of ICAR-NAARM was held on 24 Jan 2015 under the Chairmanship of Dr D. Rama Rao, Director, ICAR-NAARM. The Members present were Drs K.S. Varaprasad, Director, Directorate of Oilseeds Research, Hyderabad, R.N. Chatterjee, Director, Directorate of Poultry Research, Hyderabad and Sarla Neelamraju, National Professor, Directorate of Rice Research, Hyderabad. The special invitees from ICAR-NAARM were Drs R. Kalpana Sastry, P. Manikandan, S.K. Soam, S.K. Nanda, Manoj P. Samuel, P. Ramesh, K. Srinivas, B.S. Sontakki and Shri D.D. Verma. Shri Sanjay Kant was the Member-Secretary. The IMC reviewed the action taken on the recommendations of the 50th meeting. They were appraised on the salient achievements, training programmes, progress in research activities, Results Framework Document 2014-15 and the budget.

Academic Committee

Ten meetings of the Academic Committee were held under the Chairmanship of Dr S.L. Goswami, then Director, ICAR-NAARM and Dr D. Rama Rao, current Director, ICAR-NAARM. The agenda for the meeting comprised of discussions on capacity building, administrative and financial matters.

Institute Research Council

The 16th meeting of the ICAR-NAARM Institute Research Council was held on 14 Mar 2015 under the Chairmanship of Dr D. Rama Rao, Director, ICAR-NAARM. Discussions were held on completed projects, progress in ongoing projects and new project proposals. Drs S.M. Ilyas, T. Balaguru, M.N. Reddy and P. Murali were the external experts.

ICAR-NAARM Senior Officers' Committee

The ICAR-NAARM Senior Officers' Committee meetings were held once a month. Discussions were held on the progress of Capacity Building Programmes, research activities, administrative and finance matters. These meetings led not only to planning major activities but also in resolving many issues in the Academy.



Participation in Training/Symposia/Conferences/ Workshops/Events in India and Abroad

Participation in Training

Training in India

Drs Surya Rathore and S. Ravichandran completed the DST sponsored “Advanced Techno-management for D, E and F level Scientists” at the Administrative Staff College of India, Hyderabad that started on 24 Mar and ended on 25 Apr 2014.

Shri D.D. Verma attended the training programme on “Public Financial Management and Accountability” conducted by the International Centre for Information Systems and Audit, Noida from 26 to 30 May 2014.

Smt Savitri Murali attended a training programme on “Project Management for Events” organized by the Dr YSR National Institute for Tourism and Hospitality Management, Hyderabad, from 14 to 19 Jul 2014.

Dr Manoj P. Samuel attended a MDP on “Harnessing Intellectual Property for Strategic Competitive and Collaborative Advantage” at the Indian Institute of Management, Ahmedabad from 20 to 22 Jun 2014.

Shri Sohail Ahmed Khan attended a training programme on “Green Buildings Concepts,” organized by the Confederation of Indian Industry at Bengaluru from 6 to 7 Nov 2014.

Shri P. Mohan Singh, M. Dinesh, C.J. Samuel, K. Suryanarayana and Y. Gayatri attended a training programme on “Post-G Live Knowledge Enhancement for MIS-FIS,” at the ICAR-IASRI, New Delhi from 15 to 18 Sep 2014.

Shri T. Srinivas, C. Phaniraj, P. Srinivasu and R.

Training attended by personnel of ICAR-NAARM during 2014–15.

Category	Number of personnel	Number of training programmes	
		In India	Outside India
Scientist	8	2	5
Technical	3	3	0
Administrative and Finance	13	4	0



Courtesy: ICAR-CIAE, Bhopal

Shri N. Raghunath (second row, first from left), P. Anand Kumar and T.V. Ramdas (last row first and second from left) attended a training programme at ICAR-CIAE, Bhopal.

Chandrababu attended a training programme on “Post-G Live Knowledge Enhancement for MIS-FIS,” at the ICAR-IASRI, New Delhi from 23 to 26 Sep 2014.

Shri K.R. Ghanshyam attended a “Special Training Programme for Employees of the ICAR” at the Institute of Secretariat Training and Management (ISTM), New Delhi from 24 Nov to 5 Dec 2014.

Shri N. Raghunath, T.V. Ramdas and P. Anand Kumar attended a training programme for “Private Secretaries and Personal Assistants of ICAR,” conducted by ICAR-NAARM at ICAR-CIAE, Bhopal from 16 to 18 Jan 2015.

Training outside India

Dr M. Balakrishnan completed the NAIP sponsored international training programme on “Bioinformatics in Agriculture,” at the Cornell University, Ithaca, United States of America, on 14 Jun 2014. The programme that started on 18 Mar 2014 trained Dr Balakrishnan in the “Phylogenetic Study of Tomato Fruit Ripening Gene and Similarities to Other Fruit Crops Genes.” Dr Jim Govinoni, from the laboratory of molecular and ge-

As part of his training programme, Dr M. Balakrishnan (left) interacted with Dr Marc Smith (centre), Assistant Director, Agriculture Research Experiment Station, Geneva, USA along with Drs K.V. Raman, Cornell University and Ravi Pratap Singh (right), Director, Agriculture Sciences, Banaras Hindu University, Varanasi.

netic analysis trained him on “Fruit Ripening and Related Signal Transduction Systems with Emphasis on the Relationship of Fruit Ripening to Nutrition and the Development of High throughput Technologies.”

Dr D. Thammi Raju and P. Ramesh underwent training at the Borlaug Institute of International Agricultural, Texas sponsored by NAIP from 5 May to 13 Jun 2014.

Dr S. Ravichandran was trained at the Cornell University, Ithaca, from 10 May to 9 Jun 2014 in “Open and Distance Learning (ODL), Open Course Ware (OCW) and Open Educational Resources (OER).” The training was sponsored by the NAIP.

Dr B. Ganesh Kumar underwent training at the Cornell University, Ithaca sponsored by the NAIP from 10 May to 9 Jun 2014.

Dr Surya Rathore, was trained in “Education Information Systems” at the Borlaug Institute of International Agriculture, Texas A&M University, Texas from 14 May to 13 Jun 2014 funded by NAIP. She was exposed to various library technologies that are used by the University to provide opportunities for information retrieval. She also attended workshops on “Syllabus and Eight Ways to Introduce Technology into Teaching.” Agri-life e-Extension was another area of work that featured in the training. This programme is conducted by the Agricultural Universities in the United States of America who form Communities of Practice. These Communities are responsible for replying to the queries from farmers. Field visits were done to the Bryan county Office, Brazos Producer Cooperative and John Deerie tractors. Dr Surya Rathore also delivered a seminar on “Global Agricultural Extension: Present Status and Future Strategies,” as part of the course work.

Courtesy: Cornell University



Participation in Symposia/Conferences/Workshops/Events

Dr D. Thammi Raju participated in a seminar on ‘Case Method’ organized by the Harvard Business Publishing at the Symbiosis International University, Pune, from 1 to 2 Apr 2014.

Dr S.L. Goswami attended the discussion on “Change Management of NAIP” at the NASC Complex, New Delhi on 5 Apr 2014.

Dr S.L. Goswami attended the 10th Advisory Committee Meeting of TIFAC, on 9 Apr 2014 in New Delhi.

Dr S.L. Goswami participated in the interview board at ASRB for the selection of Senior Scientist (Business Communication) at ASRB, New Delhi on 17 Apr 2014.

Dr R. Kalpana Sastry delivered a talk on “Rural Innovation: Case Studies” to the participants of the Programme on ‘Advanced Techno Management’ conducted by Administrative Staff College of India (ASCI), at ASCI, Hyderabad on 17 Apr 2014.

Dr Ranjit Kumar presented an invited paper on “Maize Scenario and Investment Opportunities in India” in the 57th Annual Workshop of the All-India Coordinated Maize Improvement Project at MPUAT, Udaipur from 21 to 23 Apr 2014.

Dr S.L. Goswami attended the Interactive Conference of the Vice-Chancellors, Directors and Joint Directors in New Delhi from 27 to 28 Apr 2014.

Dr R. Kalpana Sastry attended the Interactive Conference of the Vice-Chancellors of State Agricultural Universities/Deemed Universities/Central Agricultural Universities and Directors/Joint Directors of ICAR Institutes, Zonal Project Directors, National Coordinators and Project Coordinators, at New Delhi on 28 Apr 2014.

Dr S.L. Goswami attended the Senior Officers Committee Meeting of ICAR in New Delhi on 30 Apr 2014.

Dr R. Kalpana Sastry attended as Special Invitee the flag-off ceremony of the Kisan Parivartan Yatra, organized by NAIP-ICAR in partnership with the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), at ICRISAT, Patancheru, on 11 May 2014.

Dr R. Kalpana Sastry attended the meeting of the ITMU of NRC on Pomegranate, Solapur, to discuss commercialization of NRCP technology with the help of NAIP-BPD Unit, NAARM, at NRCP, Solapur on 13 May 2014.

Drs Ranjit Kumar, K. Srinivas and Manoj Samuel participated in the NAIP Agri-Innovation Conclave 2014 held at NASC Complex, New Delhi from 18 to 20 May 2014.

Dr S.L. Goswami attended the First Quinquennial Review Team (QRT) of the Central Institute of Fisheries Education (CIFE), Mumbai from 20 to 21 May 2014.

Dr A. Dhandapani attended Annual Group Meeting of Sunflower, Sesame and Niger at the Agriculture University, Jodhpur from 20 to 21 May 2014. He delivered an invited talk on "AICSIP Automation System."

Dr R. Kalpana Sastry, as invited speaker, delivered a talk on "Emerging Technologies in Food Security," to the participants of the Programme on 'Emerging Trends in Food Security' organized by the Indo-American Chamber of Commerce, at Hotel Marigold, Hyderabad, on 30 May 2014.

Dr S.L. Goswami attended the Senior Officers' Committee Meeting of ICAR in New Delhi on 2 Jun 2014.

Dr S.L. Goswami attended the Director's Conference in ICAR, New Delhi on 5 Jun 2014.

Dr P.D. Sreekanth presented a paper on "Application of GIS for Efficient and Marketing of Chilli Production in Guntur District Andhra Pradesh" in the Na-

tional Conference on Geomatrix-14 at the IIT-B, Mumbai from 5 to 7 Jun 2014.

Dr R. Kalpana Sastry attended as Resource Person the Mentoring Workshop for 2015-2016 Fulbright Applicants, organized by United States-India Educational Foundation (USIEF), at the St. Francis College for Women, Begumpet, Hyderabad, on 7 Jun 2014.

Dr S.L. Goswami as Advisor screened applications for various positions at the ASRB, New Delhi from 9 to 11 Jun 2014.

Dr S.L. Goswami attended the meeting of the Selection-cum-Standing Committee of Emeritus Scientist at the ICAR Division of Agricultural Education, New Delhi on 10 Jun 2014.

Dr S.L. Goswami attended the Selection Committee meeting for the position of Director, Rajiv Gandhi South Campus of the Banaras Hindu University, Varanasi on 15 Jun 2014.

Dr S.K. Soam as an Expert Member attended the meeting of the ITMC of ICAR-Directorate of Oil Palm Research, Pedavegi on 23 Jun 2014.

Dr Surya Rathore attended the LANSa-MSSRF Workshop 'Using Google to Track and Improve your Research Impact' at the ICAR-CRIDA, Hyderabad on 25 Jun 2014.

Dr D. Thammi Raju attended a workshop on 'Range of Methods to Locate Relevant Research including Social Media' organized by the Institute of Development Studies at ICAR-CRIDA, Hyderabad on 25 Jun 2014.

Dr S.K. Soam as Member attended the Consultative Group meetings constituted by the Registrar of Geographical Indications, Government of India on 26 Jun 2014, 7 Aug 2014 and 3 Nov 2014 at New Delhi. The CG was established as per rule 33 of GI Act 2002 for registration of Naga tree tomato, Arunachal orange, Sikkim large cardamom, Mizochilli, Assam Karbi Anglong Ginger, Tripura Queen Pineapple, Memong Narang, Tezpur Litchi, Khasi Mandarin, Kachai Lemon, Salem Mango and Hosur Rose.

Dr S.K. Soam as an Expert Member ITMC attended the meeting of the ITMC of the ICAR-Directorate of Sorghum Research, Hyderabad on 4 Jul 2014, 8 Oct 2014 and 2 Dec 2014.

Dr R. Kalpana Sastry was a Panel Member in the first panel meeting of 'Agriculture and Food Processing Panel for the 2014-15' of the Andhra Pradesh State Council of the Confederation of Indian Industry, at the CII, Andhra Pradesh State Office, Hyderabad on 4 Jul 2014.

Dr D. Rama Rao attended the ICAR-NASI Awards Function at New Delhi on 5 Jul 2014.

Dr D. Rama Rao attended the meeting with the World Bank Team in relation to NAIP at New Delhi on 7 Jul 2014.

Dr S.K. Soam as an Expert Member attended the meeting of the Assessment Committee nominated by Director-General, ICAR for promotion of a scientist under Career Advancement Scheme (CAS) at ICAR-Directorate of Oil Palm Research, Pedavegi, on 11 Jul 2014.

Dr P.C. Meena attended a workshop on 'Harnessing Opportunities to Improve Agri-food Systems' jointly organized by the IGIDI, Mumbai and the International Food Policy Research Institute, New Delhi at the NASC Complex, New Delhi from 24 to 25 Jul 2014.

Dr D. Rama Rao as a Member attended the Expert Committee Panel for Presentation of Achievements by the Awardees of the ICAR Awards 2013 at New Delhi on 28 Jul 2014.

Dr D. Rama Rao attended the 86th ICAR Foundation Day Celebrations and the Vice-Chancellors' and Directors' Conferences at New Delhi from 29 to 30 Jul 2014.

Dr D. Rama Rao attended the ICAR Senior Officers Committee Meeting at New Delhi on 31 Jul 2014.

Dr R. Kalpana Sastry as a Member of the Selection Committee for selection of project faculty in the Centre for Post-graduate Studies (CPGS) in the National Institute of Rural Development, Hyderabad on 1 Aug 2014.

Dr R. Kalpana Sastry attended as a Member, the XXV Meeting of the Institute Management Committee of the National Centre for Agricultural Economics and Policy Research (NCAP) NCAP, New Delhi on 12 Aug 2014.

Dr Manoj P. Samuel attended the Annual Summit of Society for Technology Management (STEM) at Hotel Greenpark, Hyderabad from 19 to 20 Aug 2014.

Dr P. Venkatesan participated in the interface workshop of 'KVKs Interventions in Tribal Areas and En-

hancing Efficiency' at the NASC Complex, New Delhi from 19 to 20 Aug 2014.

Dr M. Balakrishnan was a Rapporteur during the Silver Jubilee Symposium on "Nutritionally Sensitive and Environmentally Sustainable Agriculture for India's Food and Nutrition Security: Challenges and Opportunities" held at ICAR-NAARM on 23 Aug 2014.

Dr D. Rama Rao attended the ICAR Mission – wrap-up meeting of NAIP at NASC Complex, New Delhi on 28 Aug 2014.

Dr S.K. Soam was an invited expert at the workshop on 'Open Data Solutions for Rural Development and Inclusive Growth' organized by by SERP, Government of Andhra Pradesh on 4 Sep 2014, at Hyderabad.

Dr D. Thammi Raju participated in the 'MOOC on MOOC: A Massive Open Online Course for Development' organized by the Center for Development of Technical Education, Indian Institute of Technology, Kanpur and the Commonwealth of Learning and Knowledge Incubation for Technical Education Quality Improvement Programme from 5 Sep to 12 Oct 2014.

Dr D. Rama Rao attended the lecture by Dr Jose Graziano da Silva, Director-General, Food and Agriculture Organization of the United Nations at the NASC Complex, New Delhi on 8 Sep 2014.

Dr K.H. Rao attended the 'Functional Competency Mapping and Assessment,' sensitizing programme by FICCI, Hyderabad from 11 to 12 Sep 2014 at the Hyderabad International Convention Center (HICC).

Dr S. Ravichandran attended the Annual Conference of Agricultural Economics Research Association at the University of Agricultural Sciences, Raichur in Sep 2014.

Dr R. Kalpana Sastry gave a lecture on "IPR and Technology Management in Agriculture" as an invited speaker for the faculty and PG students of the PG Centre of Mahatma Phule Krishi Vidyapeeth (MPKV), Rahuri on 15 Sep 2014 at MPKV, Rahuri.

Dr D. Rama Rao attended the 33rd Meeting of the CJSC at NASC Complex, New Delhi on 19 Sep 2014.

Dr P.D. Sreekanth participated in the National Seminar on 'Garuda-NKN Partners Meet-2014' at IISC, Bengaluru from 19 to 20 Sep 2014.

Dr S.K. Soam as a Member of the ICAR Geoportal Committee headed by the Deputy Director-General (NRM), ICAR, New Delhi participated in the meeting on 'Development of Modalities and Action Plan for ICAR Geoportal,' held from 23 to 24 Sep 2014 at Hyderabad.

Dr D. Rama Rao received the "Agriculture Leadership Award" organized by Agriculture Today conferring ICAR-NAARM with "Academic Leadership Award, 2014" at Agriculture Leadership Summit at Taj Palace, New Delhi on 27 Sep 2014.

Dr R. Kalpana Sastry attended the Annual Meeting-cum-Workshop 2014 organized by the Zonal Technology Management Centre, South Zone in association with the Indian Institute of Horticulture Research (IIHR), Bengaluru on 9 and 10 Oct 2014 at IIHR, Bangalore.

Dr Manoj P. Samuel attended the the Annual Meeting-cum-Workshop 2014 organized by the Zonal Technology Management Centre, South Zone in association with the Indian Institute of Horticulture Research (IIHR), Bengaluru on 9 Oct 2014.

Dr Surya Rathore conducted a panel discussion on 'Role of Community and Media in Elimination of Corporal Punishment' on 15 Oct 2014 in the National Seminar on 'Discipline with Dignity and Child Rights,' organized by the M.S. University of Baroda, in collaboration with UNICEF, Gandhinagar from 14 to 15 Oct 2014.

Dr D. Thammi Raju participated in the Conference and Exposition on 'Sustainable Technologies, Opportunities and Entrepreneurship Development in Dairy Industry,' organized by the Andhra Pradesh Technology Development and Promotion Centre (APTDC) and the Confederation of Indian Industry (CII) at Hyderabad on 17 Oct 2014.

Dr K.H. Rao attended the a seminar 'A Case Method Teaching,' jointly organized by the Harvard Business Publishing and the Indian Institute of Management, Ahmedabad from 17 to 18 Oct 2014 at the IIM, Ahmedabad.

Dr S.K. Soam delivered a lecture on "Project Logical Framework" for the International Training Programme on 'Good Governance for Management of Rural Development Programmes,' sponsored by the Ministry of

External Affairs, Government of India at NIRD, Hyderabad on 27 Oct 2014.

Dr R. Kalpana Sastry attended the meeting of the Consultative Group for GI Applications at the IPO Conference Hall, Intellectual Property Office Building, and New Delhi on 28 Oct 2014.

Dr D. Rama Rao attended the 41st Foundation Day Celebrations of the Agricultural Scientists Recruitment Board at New Delhi on 1 Nov 2014.

Dr P.C. Meena attended a workshop on 'Development of Inclusive Value Chain for Rainfed Agriculture' organised by the International Crop Research Institute for the Semi-Arid Tropics, Hyderabad from 5 to 7 Nov 2014.

Dr P. Venkatesan presented a paper on "Folklore Classification of Little Millet (*Panicum sumatranse*) in Tribal Areas of Tamilnadu" and also participated in the 7th National Extension Education Congress-2014 organized by the Society of Extension Education, Agra on 'Translational Research-Extension for Sustainable Small Farm Development' at the ICAR Research Complex for NEH Region, Umiam, Meghalaya from 8 to 11 Nov 2014.

Drs D. Rama Rao and Kalpana Sastry attended the meeting to review the status of 'Vision 2050' with the Director-General, ICAR, in New Delhi on 11 Nov 2014.

Dr D. Rama Rao attended the Assessment Committee meeting under CAS from Senior Scientist to Principal Scientist at ASRB, New Delhi on 17 Nov 2014.

Dr S.K. Soam was an invited expert at the 'Communication Workshop on Agricultural Biotechnology' organized by the International Food Information Council Foundation, Washington DC and the Ministry of Environment and Forests, Government of India on 19 Nov 2014 at New Delhi.

Dr D. Rama Rao attended the ICAR Senior Officers' Committee Meeting at New Delhi on 28 Nov 2014.

Dr A. Dhandapani delivered two lectures, "Introduction to R-Studio" and "Hands-on Practical in R" in the international training programme on 'Importance of Statistical and Experimental Designs, Data Analysis and Biometrical Techniques in Agricultural Research' for the Ministry of Agriculture, Irrigation and

Livestock, Afghanistan Agricultural Inputs Project (AAIP), Islamic Republic of Afghanistan organized by the ICAR-Indian Agricultural Statistics Research Institute, New Delhi on 28 Nov 2014.

Dr S.K. Soam chaired the panel on “Technology and OER: Case Studies” at the ‘National Consultation on OER for Skill Development’ organized by the Commonwealth Educational Media Center for Asia, an organization of the Commonwealth of Learning (COL), Canada on 28 Nov 2014 at New Delhi.

Drs Ganesh Kumar, Manoj P. Samuel, Sivaramane, P.C. Meena and Ravi Viswanathan attended the workshop on ‘Tackling Food inflation in India: Towards a Sustained Solution’ jointly organized by IFPRI-CESS-NAARM at Center for Social and Economic Studies, Hyderabad on 28 Nov 2014.

Dr R. Kalpana Sastry participated in the Brainstorming Meeting for developing indicators for ranking the institutions and universities, organized by the National Academy of Agricultural Sciences (NAAS), New Delhi at the NASC Complex, New Delhi on 4 Dec 2014.

Dr P. Venkatesan presented a paper on “Perceived Effectiveness of Tribal Farmers towards Indigenous Tribal Agricultural Practices” and also participated in the National Seminar on ‘Extension Management Strategies for Sustainable Agriculture – Challenges and Opportunities’ organized by the Society of Extension Education, Coimbatore at the Agriculture and Research Institute, Madurai from 11 to 13 Dec 2014.

Dr S. Ravichandran gave an invited lecture on “Modelling Climate Change and Rice Production” during the National Conference on ‘Emerging Challenges and Opportunities in Biotic and Abiotic Stress Management (ECOBASM-2014)’ and also attended the conference at the ICAR-Directorate of Rice Research, Hyderabad during 13 to 14 Dec 2014.

Smt G. Aneja attended the 36th All-India Public Relations Conference at Jaipur organized by the Public Relations Society of India from 19 to 21 Dec 2014.

Dr D. Rama Rao attended the ICAR Senior Officers’ Committee Meeting at New Delhi on 30 Dec 2014.

Drs D. Rama Rao and R. Kalpana Sastry attended the meeting under the Chairmanship of the Director-

General, ICAR, New Delhi for firming up the operationalization of XII Plan Scheme “National Agriculture Innovation Foundation” at NASC Complex, New Delhi on 13 Jan 2015.

Dr D. Rama Rao attended the workshop-cum-brainstorming session on “Optimizing Talent Search and Induction for Agricultural Research and Education System” at the ICAR-NDRI, Karnal, organized by the ASRB, New Delhi on 16 Jan 2015.

Dr D. Rama Rao attended the ‘International Year of Evaluation Celebration of Evaluation Week’ organized by NITI Aayog, New Delhi on 19 Jan 2015.

Dr D. Rama Rao attended the ICAR Senior Officers’ Committee Meeting at New Delhi on 2 Feb 2015.

Dr M. Balakrishnan delivered a lecture in the 26th All-India BTISnet Coordinators meeting held at the Sri Venkateswara University, Tirupati, organized by the DBT, Government of India on 3 Feb 2015.

Dr D. Rama Rao attended a meeting with the Director-General, ICAR on the implementation of MIS-FMS on 13 Feb 2015.

Dr Manoj P. Samuel attended the XXVII National Convention of Agricultural Engineers and National Seminar on ‘Green Revolution through Agricultural Engineering Technologies’ at the Institution of Engineers, Thiruvananthapuram from 22 to 23 Feb 2014.

Dr R. Kalpana Sastry participated in the 4th meeting for finalization of guidelines for PME Units in ICAR jointly organized by NAARM-NAAS-IFPRI at New Delhi on 23 Feb 2015.

Dr M. Balakrishnan attended the 18th ADNAT Convention Symposium on “Genetic Engineering of Agricultural Crops and Livestock: Current Status, Social, Ethical and Regulatory Issues” at the University of Hyderabad, Hyderabad from 23 to 25 Feb 2015.

Dr A. Dhandapani convened a session on ‘Data Mining’ and also gave an invited talk, “Centralized Data Repository for Agricultural Research” at the Annual Conference of Society of Statistics, Computers and Applications, BIMTECH, held in Bhubaneswar from 23 to 25 Feb 2015.

Dr S. Ravichandran gave an invited lecture on “Big Data and its Application in Agriculture” in the ‘Na-

tional Conference of Society of Statistics and Computer Applications' at BIMTECH, Bhubaneswar during 23 to 25 Feb 2015.

Dr Manoj P. Samuel attended the 49th Annual Convention of ISAE at the Punjab Agricultural University, Ludhiana on 23 to 25 Feb 2015.

Drs Ganesh Kumar, D. Thammi Raju and M. Balakrishnan attended the 18th ADNAT Convention Symposium on "Genetic Engineering of Agricultural Crops and Livestock: Current Status, Social, Ethical and Regulatory issues," at the University of Hyderabad, from 23 to 25 Feb 2015.

Dr Surya Rathore presented a lead paper "Boosting Rural Economies through Local Economic Development (LED)" in the National Seminar on 'Extension Innovations and Methodologies for Market-led Agricultural Growth and Development,' organized by the Indian Society of Extension Education from 26 to 28 Feb 2015 at the Rajmata Vijayaraje Scindia Krishi Vishwa Vidyalaya, Gwalior.

Dr D. Rama Rao attended the ICAR Senior Officers' Committee Meeting at New Delhi on 27 Feb 2015.

Dr D. Rama Rao attended a meeting in the Division of Agricultural Education, ICAR, New Delhi to discuss guidelines to improve teaching through online classes, e-tutorials and specific modules for capacity building of the faculty in the Agricultural University system on 4 Mar 2015.

Dr D. Rama Rao attended the ICAR Senior Officers' Committee Meeting at New Delhi on 16 Mar 2015.

Dr P. Venkatesan presented a paper on "An Empirical Model for Development, Dissemination and Promotion of Indigenous Practices" in the National Seminar on 'Recent Trends in Eco-friendly Farming Practices for Food Security,' organized by the Faculty of Agriculture and Animal Husbandry and the Centre for Indigenous Knowledge in Agriculture, Gandhigram Rural Institute,

Gandhigram, Dindigul, Tamil Nadu from 12 to 13 Mar 2015.

Dr R. Kalpana Sastry facilitated a session on 'Managing Intellectual Property for Enhancing Innovations' in the Off-campus Training Programme on 'Planning, Monitoring and Evaluation (PME) and Technology Management' organized for the scientists of Central Muga Eri Research and Training Institute (CMERTI), Jorhat, Assam held at CMERTI, Jorhat, Assam on 12 Mar 2015 and also co-chaired the valedictory session of the programme, on 13 Mar 2015.

Dr R. Kalpana Sastry facilitated a session on 'IPR in Pest Management' to the participants of the ICAR sponsored Winter School on IPM Strategies at NRCIPM, New Delhi on 17 Mar 2015.

Dr R. Kalpana Sastry was a Panel Member in the Interface Meeting on 'Industry-Institute Interface: Opportunities for Public Private Partnership,' organized by the ICAR-Directorate of Poultry Research (DPR) at DPR, Hyderabad on 18 Mar 2015.

Dr Manoj P. Samuel attended the 'National Agricultural Day' at Vignan's Foundation for Science, Technology and Research University, Guntur on 18 Mar 2015, and delivered a technical speech on "Agricultural Engineering with Focus on Water Management."

Dr R. Kalpana Sastry participated in the meeting of the Apex Project Monitoring Committee (APMC) to review the progress of foreign collaborative projects on 23 Mar 2015 at ICAR, New Delhi.

Dr A. Dhandapani gave a talk on "Statistics and Agriculture" in the Workshop on 'Mathematics Beauty of Nature' organized by the Prof. C.R. Rao Advanced Institute of Mathematics, Statistics and Computer Science, Hyderabad on 26 Mar 2015.

Dr Manoj P. Samuel participated in the Department of Science and Technology sponsored exposure visit to Russia from 13 to 20 Sep 2014.



Courtesy: Manoj P. Samuel



Ravi Viswanathan

The personnel of ICAR-NAARM participated in the General Elections 2014 as Micro-observers. The photograph shows some of the personnel under training by the Official of the Election Commission of India.

Elections

The staff of the ICAR-NAARM participated in three major activities for the Election Commission of India, Government of India and the Government of Telangana. These were as Micro-Observers for conduct of elections for the Hyderabad MPTC/ZPTC Elections-2014, Micro-observers for the General Elections for the Parliament and Assembly Elections for Andhra Pradesh and as Enumerators for the Intensive Household Survey in Ranga Reddy District on 19 Aug 2014.

Foreign Deputation

Dr R. Kalpana Sastry participated and co-chaired a session on “Global Food and Nutrition” in Indo-German Frontiers of Engineering Symposium 2014 organized jointly by the Alexander von Humboldt Foundation, the Department of Science and Technology, Government of India and the International Advanced Research Centre for Power Metallurgy and New Materials held at Potsdam, Germany from 22 to 25 May 2014.

Dr Manoj P. Samuel participated in the Department of Science and Technology sponsored exposure visit to Russia from 13 to 20 Sep 2014 under the scheme ‘National Programme for Training of Scientists/Technologists Working in Government Sector,’ and visited eight scientific institutions in Moscow, Dubna and St. Petersburg.

Dr K. Srinivas attended the 12th Asian Maize Conference and Expert Consultation on ‘Maize for Food, Feed Nutrition and Environmental Security and also gave an invited lecture on “Assessment of Maize Situation, Outlook and Opportunities in Asia” during 30 Oct to 1 Nov 2014, in Bangkok, Thailand.

The ICAR-NAARM participated in the All-India Rose Show held at the Hyderabad International Convention Centre (HICC) from 29 Nov to 2 Dec 2014. Drs V. Murali (right) and M.A. Basith (left) represented ICAR-NAARM.

Courtesy: V. Murali



Rose Show

The ICAR-NAARM participated in the All-India Rose Show held at the Hyderabad International Convention Centre from 29 Nov to 2 Dec 2014 by providing entries in categories of “Single H.T. specimen bloom under red, white, yellow, pink, deep pink, orange, lavender, bicolor/multicolor categories; H.T. specimen blooms of 12 different varieties; H.T. specimen blooms of any single variety; Indian varieties; and single and multiple specimen blooms under floribundas, miniatures and polyanthas.” Drs V. Murali and M.A. Basith, from ICAR-NAARM were among the 200 delegates from around the world who participated in the conference ‘Rose Eternal’ and the rose show. The convention was conducted by the World Federation of Rose Societies.

Workshops, Symposia, Seminars, Events Organized

Deliberations on Monsoon Rainfall Deficit at ICAR-NAARM

“Strategies to Manage the Deficit Monsoon 2014” was the theme of the deliberation conducted by Dr M.S. Swaminathan, Emeritus Chairman, M.S. Swaminathan Research Foundation, Chennai along with Dr S. Ayyappan, Secretary, Department of Agricultural Research and Education (DARE) and Director-General, ICAR, and Vice-Chancellors of State Agricultural Universities at ICAR-NAARM on 1 Jul 2014. The deliberations addressed the difficult situation arising from deficit monsoon and brought out a strategy and action plan to tackle it.

Minimum Standards for Higher Agricultural Education

A meeting of the ICAR’s Expert Committee to work out the “Minimum Standards of Higher Agricultural Education (MSHAE)” in terms of infrastructure, laboratories and field facilities, faculty, manpower and other support for establishing College of Agribusiness Management in the State Agricultural Universities, institutes of the ICAR and Deemed Universities, was held

Dr M.S. Swaminathan (right) conducted a deliberation ‘Strategies to Manage the Deficit Monsoon 2014’ on 1 Jul 2014 at ICAR-NAARM. Also seen from left are Drs S. Ayyappan, A.K. Sikka and M.V. Rao.



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in ICAR-NAARM from 6 to 7 May 2014. The committee comprised of Dr S.L. Goswami, Director ICAR-NAARM, who chaired the meeting, Dr N.H. Rao, Principal Scientist, ICAR-NAARM, Chairman of the Committee, Dr V.P.S. Arora, Vice-Chancellor, SuperTech University, Rudrapur, Uttarakhand, Dr G.S. Dasog, Dean (Agriculture), College of Agriculture, University of Agricultural Sciences, Dharwad and Dr K. Raja Reddy, Director of Research, ANGRAU, Hyderabad. Dr K.L. Khurana, Principal Scientist, Division of Agricultural Education, ICAR, New Delhi was the Member-Secretary. The committee discussed academic and institutional aspects and gave its recommendations. These included Definition and scope of agribusiness management in context of changing agriculture/business/environment/society; Competencies and attributes for present and future agribusiness graduates; Core functional areas/Programme areas; Faculty requirement (Core, Adjunct, Visiting); Faculty development; Faculty functions; Leveraging other competencies in SAUs; Ph.D. programme; Executive education; Linkages; Institutionalizing a learning organization mode; Basic infrastructure; Nomenclature and programme (Name: College/Department); Eligibility criteria for admission and intake; Admission process; Pedagogy (good practices); Experiential learning; Placement cell; Scholarships; and Organizational structure.

NAAS Silver Jubilee Symposium

“Nutritionally Sensitive and Environmentally Sustainable Agriculture for India’s Food and Nutrition Security: Challenges and Opportunities,” was the theme of the National Academy of Agricultural Sciences (NAAS) Silver Jubilee Symposium held at ICAR-NAARM on 23 Aug 2014. The Symposium was spread over three technical sessions. The topics were ‘The Problem of Nutrition Insecurity in India,’ ‘Towards Ever-green Revolution for Food,’ ‘Government Programmes



“Nutritionally Sensitive and Environmentally Sustainable Agriculture for India’s Food and Nutrition Security: Challenges and Opportunities,” was the theme of the NAAS Silver Jubilee Symposium held at ICAR-NAARM on 23 Aug 2014.

Seen the photograph (above) are the participants getting together for a photograph.

Below: Dr S. Ayyappan spoke of the ICAR policies to ensure nutritional security.

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related to Nutritional Security,’ ‘Climate Change and Water Security Concerns,’ ‘Biofortification for Improving Nutrient Content of Food,’ ‘ and ‘Prevention of Pre- and Post-harvest Wastage of Food.’ The recommendations were: There should be nutrition literacy at all levels and strong leadership; Awareness about age, gender, and physiological status appropriate nutritional requirements should be created among the people by harnessing modern tools like ICT and community based approaches. Government should emphasize on nutritional security in all its welfare schemes/ programmes; Homestead production of vegetables, poultry, and dairy both in rural and urban areas can enhance household access to protective foods and hence should be encouraged; Food processing needs to be encouraged/ incentivized through subsidies. Small, micro processing units should be encouraged to be set-up near major

production centres; Success stories and experiences in some states on the adoption of better nutritional interventions through ICDS such as providing pulses, fruits and eggs, can be emulated in other states. Special focus of intervention should be on the needs of children and pregnant and lactating women; Adequate quantity of different nutrients should be worked out for South Asians/Indians in particular as the global recommendations on these may be over-estimates for this region; Strategies on climatic preparedness of Indian agriculture through sophisticated techniques, employing high-end statistical models, GIS and remote sensing techniques need to be developed. Such strategies should focus more on water security which is intricately related to the food and nutritional security; The post-harvest losses of food items, which were computed for the year 2005, need to be updated and estimates of nutrient



Seen in the photograph are participants of the IFPRI-ICAR-NAARM-CESS workshop on “Tackling Food Inflation in India: Towards a Sustained Solution” held on 28 Nov 2014.

steps to be taken in food security policy and research.

The programme was spread over sessions, namely “Food Inflation and Food Security Act in India,” “Government Policy Perspective on the Issue of Food Prices,”

losses due to poor storage, have to be derived; Detailed nutrient content and additives (including saturated fat, sugar and salt) of different processed and packaged foods should be made available to the users through proper labelling to promote healthy food choices; Capacity building of scientists in National Agricultural Research System in frontier areas of sciences including genetic engineering and nanotechnology need to be prioritized to develop cutting-edge technologies in the areas of varietal development and food processing for ensuring food and nutritional security. Dr M.V. Rao gave the inaugural address. Dr S. Ayyappan, Secretary, Department of Agricultural Research and Education (DARE) and Director-General, Indian Council of Agricultural Research, gave the Presidential Address. Dr Mahtab S. Bamji was the Convener. Dr R.B. Singh, spoke on “Environmental Consequences of Green Revolution: Mitigation through Integrated Farming Systems.” Dr R. Kalpana Sastry was the Organizing Secretary.

Workshop for Tackling Food Inflation in India

The International Food Policy Research Institute (IFPRI) along with the ICAR-National Academy of Agricultural Research Management (ICAR-NAARM) and the Centre for Economic and Social Studies (CESS) held a one day Workshop on “Tackling Food Inflation in India: Towards a Sustained Solution” with specific reference to Telangana and Andhra Pradesh on 28 Nov 2014 at the CESS, Hyderabad. The objectives were to identify issues on food and nutrition security and the

“Marginalized Groups and Food Security,” “Agribusiness and Food Prices: History and the Way Forward,” and “Key Issues for Research in Food and Nutrition Security in Telangana and Andhra Pradesh.”

Dr R. Radhakrishna, Chairman, CESS elaborated on the background of the workshop and emphasized on the need to control inflation by quoting from his experiences. He also mentioned the urgent implementation of technologies to improve the productivity of crops from lands. He also said that attention should be given to dryland areas so that these become cultivable.

Dr P.K. Joshi, Director (South Asia), IFPRI, New Delhi spoke on nutritional security and food security and the policies of the IFPRI in updating information in its food portal. He mentioned about the history of tackling food inflation in India and the availability of food to the population. “Affordability of food thro’ Right to Food is an important pillar to ensure food security,” he said.

Dr Devesh Roy, IFPRI, presented the IFPRI Food Security Portal and explained proposed IFPRI India Food Security Portal that is likely to be launched in Dec 2014.

Dr R. Kalpana Sastry, Joint Director, ICAR-NAARM, elaborated on a few cases in innovation and explained the need to include a study on minor millets for nutritional and food security. The National Food Security Act was discussed by Prof M. Kodandaram, Osmania University, Hyderabad. He explained the advantages and disadvantages of the Act. The policies of the Government of Telangana were presented by Shri C. Parthasarathy, IAS, Commissioner (Civil Supplies), Government of Telangana. He elaborated on the policies that included a multipronged approach towards

food inflation, market interventions and the enforcement mechanisms. He also spoke on the current decisions taken by the Government of Telangana to help the poor get nutritional security. Dr G.P. Reddy was the Convener.

18th ADNAT Convention and Symposium

The Association for the Promotion of DNA Fingerprinting and Other DNA Technologies (ADNAT), the ICAR-National Academy of Agricultural Research Management (ICAR-NAARM), and the University of Hyderabad conducted the 18th ADNAT Convention Symposium on “Genetic Engineering of Agricultural Crops and Livestock: Current Status, Social, Ethical and Regulatory Issues,” from 23 to 25 February 2015 at the campus of the University of Hyderabad, Gachibowli, Hyderabad. There were six sessions, namely, ‘Current Methods of Plant Genetic Manipulation and Stresses,’ ‘Resistance to Plant Biotic Stresses,’ ‘Biotechnology-Myths and facts,’ ‘Abiotic Stress Tolerance in Plants,’ ‘Plant Biotechnology,’ ‘Animal Genetic Engineering: Current Status,’ and ‘Biosafety, Ethical and Regulatory Issues.’

“Transfer of genetic material across taxonomical groups is now possible that can transform the life of the society,” said Dr E. Haribabu, Vice-Chancellor, University of Hyderabad, during his address as Chief Guest in the inaugural session. He also said “However, ge-

netic engineering has legal, social, and patent issues that need to be addressed for the technology to get popularized. The other important facet of genetic engineering is in cattle that play an important part in farming systems. Risk is another facet of genetic engineering that has to be considered before any technology is transferred for commercial use.”

Dr Lalji Singh, Former Vice-Chancellor, Banaras Hindu University, Former Director, CSIR-Centre for Cellular and Molecular Biology and currently the President of ADNAT said “Technology is driving science today, and India has to develop its own technology to stay ahead.”

“Sensitization of the citizens and exploitation of system biology that is considered as the future of science biology is of paramount importance,” said Dr D. Rama Rao, Director, ICAR-NAARM, Hyderabad during his address. He emphasized on the need of a policy dialogue so that the benefits of genetic engineering will benefit the society at large.

A popular lecture by Dr C. Kameswara Rao ‘Addressing the Myths and Facts about Modern Agricultural Biotechnology,’ addressed the issues in Biotechnology. Dr P.M. Bhargava also spoke on the issues facing biotechnology today.

The Organizing Committee comprised of Drs Satish Kumar, Archana B. Siva and Akshay Joshi from the Centre for Cellular and Molecular Biology, Hyderabad, P.B. Kirti and Appa Rao Podile from the University of Hyderabad, Hyderabad, Bruce Whitelaw from the

The participants of the 18th ADNAT Convention Symposium get together for a photograph on 23 Feb 2015.

Courtesy: ADNAT





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A farmer in village S. Lingotam interacts with the scientists of ICAR-NAARM on 2 Oct 2014.

Roslin Institute and Royal Dick School of Veterinary Studies, University of Edinburgh, United Kingdom, and N.H. Rao and Ravi Viswanathan from the ICAR-NAARM, Hyderabad.

ICAR-NAARM Adopts Two Villages

The ICAR-NAARM adopted two villages, S. Lingotam and Tallasingaram in Chautuppall Mandal, Nalgonda district from 2 Oct 2014 in PPP mode with Pratistha industries. The adoption was based on the Prime Minister's "Sansad Adarsha Gram Yojana (SAGY)" to improve the livelihoods, integrate market linkages and initiate faster, cheaper and efficient ICT-based transfer-of-technology. The activities conducted

were: Baseline survey and general health camp by the ICAR-NAARM Medical Centre on 6 Dec 2014; Knowledge tests on major crops for sample farmers for assessing knowledge gaps; Focussed group discussions on livelihoods, animal husbandry and crop husbandry; ICTs access, usage and preference for agriculture; and Digitization of Cadastral maps indicating village boundary and survey numbers. Scientists from ICAR-NAARM and from ICAR institutes in Hyderabad visit the villages every month.

Swachh Bharat Abhiyan

Swachh Bharat Abhiyan (Clean India Mission) is a national campaign by the Government of India, to clean the streets, roads and infrastructure of the country. As part of this initiative the ICAR-NAARM organized special Abhiyans on 2 Oct 2014, 18 Jan 2015 and 14 Mar 2015 in its campus in addition to regular daily activities. During the special Abhiyan on 18 Jan 2015, Dr S. Ayyappan, Secretary, Department of Agricultural Research and Education (DARE) and Director-General, Indian Council of Agricultural Research, led the cleanliness drive in the campus.

The ICAR-NAARM organized Swachh Bharat Abhiyan on 2 Oct 2014, 18 Jan 2015 and 14 Mar 2015 in its campus in addition to regular daily activities. During the special Abhiyan on 18 Jan 2015, Dr S. Ayyappan, also participated (right).

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The ICAR-NAARM Foundation Day was celebrated on 1 Sep 2014. Dr Shantha Sinha (below right) spoke on “Adolescent Girls and Education.” Above: The participants get together for a photograph.

National Science Day

The National Science Day is celebrated on 28 Feb every year to commemorate the invention of the Raman Effect in India by the Indian physicist, Sir Chandrasekhara Venkata Raman in 1928. The objectives are: To create enthusiasm among the people and to popularize science and technology and inculcating scientific temper among the masses. The ICAR-NAARM celebrated the 29th National Science Day with two activities. A batch of 90 students from Government High School, Rajendranagar studying in the VIII and IX classes were exposed to the scientific activities at ICAR-NAARM including use of multimedia and GIS. In the second event students of the ICAR-NAARM Postgraduate Diploma in Management (Agriculture) and young professionals participated in an elocution competition on the focal theme ‘Science for Nation Building.’

ICAR Foundation Day

The 86th ICAR Foundation Day was celebrated on 16 Jul 2014 at ICAR-NAARM with participation of the Directors of the ICAR institutes at Hyderabad. Smt



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Poonam Malakondiah, IAS, Agricultural Production Commissioner and Principal Secretary to the Government of Telangana was the Chief Guest. In

her address she said “Technologies available with the ICAR should be made available to farmers by closely working with extension workers.”



ICAR-NAARM Foundation Day

Dr Shantha Sinha, Professor, Department of Political Science, University of Hyderabad, and Former Chairperson, National Commission for Protection of Child Rights (NCPCR), Government of India, was the Chief Guest at the 39th Foundation of ICAR-NAARM on 1 Sep 2014. She spoke on “Adolescent Girls and Education,” based on her ongoing research project of understanding the barriers girls (whose parents never went to school), had to overcome to complete class 10 and pursue their education further (<https://www.youtube.com/watch?v=G8U3BdWvEBw>). Dr D. Rama Rao, Director, ICAR-NAARM presided over the function (<https://www.youtube.com/watch?v=FwbtAy-67eA>).

Scan the code with your smartphone to view the Speech of Drs Shantha Sinha (left) and Rama Rao (right)



Vigilance Awareness Week

The vigilance awareness week was held from 27 Oct to 1 Nov 2014 on the theme "Combating Corruption—Technology as an Enabler." The week started with a pledge by the staff followed by activities such as 'Essay Competitions' and 'Group Discussion.' A special lecture on the theme was delivered by Shri D. Chakrapani, IAS (Retired), Director, Centre for Innovations in Public Systems (CIPS), Hyderabad.



Shri D. Chakrapani spoke on combating corruption.

Chief Guest who presented awards to the winners of the competitions.

Official Language Implementation Meetings

The ICAR-NAARM Official language Implementation meetings were conducted on 7 Apr 2014, 21 Jul 2014 and 11 Feb 2015.

Training in Hindi

The Hindi unit at ICAR-NAARM imparted training to the staff in Hindi teaching scheme 'Praveen' from 10 Jun to 7 Jul 2014 and for the 'Pragya' course was from 8 to 28 Jul.

Rashtriya Ekta Divas

On the occasion of Sardar Vallabhbhai Patel's birth anniversary, the 'Rashtriya Ekta Diwas' pledge was taken by the staff on 31 Oct 2014.

Communal Harmony Week

The Communal Harmony Week was held at ICAR-NAARM from 19 to 25 Nov 2014 aimed to "Instill Sentiments of Peaceful-coexistence, Mutual Respect, Amity and Brotherhood amongst the Diverse Segments of our Society."

Hindi Activities

Hindi Fortnight Celebrated

The Hindi fortnight was celebrated from 2 to 16 Sep 2014. Competitions were organized for the staff that included 'Just a Minute,' 'Memory,' 'General Knowledge,' 'Elocution' and 'Antakshari' The valedictory session was held on 16 Sep 2014 with Dr Ved Prakash Sharma, Director, IT, Manage, Hyderabad as the

The Hindi unit at ICAR-NAARM imparted training to the staff in the Hindi teaching scheme.



All-India Examinations at ICAR-NAARM

The ICAR-NAARM is one of the national centres for All-India Competitive Examinations. It conducted the: AIEEA-UG/PG-2015 on 12 Apr 2014 for Hyderabad Centre and AICE-SRF (PGS)-2014 for Hyderabad centre on 13 Apr 2014, at JNTUH-CEH.

ASRB All-India Competitive Examination for AO/FAO-2014 for Hyderabad Centre on 23 Nov 2014 where 869 candidates took the examination at the JNTU, Hyderabad.

ARS Mains Examination 2014 on 28 Dec 2014 for Hyderabad Centre where 179 candidates appeared.

ASRB On-line preliminary exam for Assistant (Direct Recruitment) for Hyderabad Centre from 5 to 19 Jan 2015. A total of 4,127 candidates appeared.

Health Camps and Talks Conduced

Drs Deepti, Physician, P.R.R. Mohan Rao from the



The ICAR-NAARM is a national centre for All-India Competitive Examinations. It conducted different examinations.

Kamineni Hospitals, Hyderabad and A. Debnath from ICAR-NAARM conducted a health camp on 23 May 2014 at the ICAR-NAARM Health Centre. Seventysix persons were investigated.

A bone mineral density (BMD) camp was organized on 17 Jul 2014. Dr Sanjay Tapadia, Orthopaedic Surgeon examined 76 persons.

A multi-speciality health camp was organized with the Yashoda Hospital, Malakpet, Hyderabad on 26 Sep 2014. Dr Ali, Cardiologist and Dr Satish, Orthopaedic Surgeon examined 131 persons.



Dr A. Debnath examines a patient at the health camp conducted in adopted village S. Lingotam on 6 Dec 2014.

A diabetic camp was organized on 14 Nov 2014 by MSN Laboratories, Hyderabad where 94 persons were examined.

A health camp was conducted at ICAR-NAARM adopted village S. Lingotam, on 6 Dec 2014 with the CARE Hospital, Nampally. A total of 223 persons were examined.

A multi-speciality health camp was organized with CIPLA India Ltd. on 11 Mar 2015 Various investigations including pulmonary function test, biothesiometry (neuropathy diagnostic) test and ECG were conducted. A total of 116 persons were examined.

Lecture delivered on Diabetes: "Early Identification and Management of Diabetes," was the talk given by Dr Anjana Harnoor, consultant endocrinologist, STAR Hospitals, Hyderabad on 17 Jun 2014 at ICAR-NAARM.

Reunirse 14

The ICAR-NAARM PG Alumni Association conducted its annual meet 'Reunirse 14' on 6 Sep 2014. The event was attended by 50 alumni of the PGDMA, current students of the PGDMA and staff at ICAR-NAARM. The past students shared their experiences after passing out.

The ICAR-NAARM PG Alumni Association conducted its annual meet 'Reunirse 14' on 6 Sep 2014.



Distinguished Visitors



Left to right: Drs S. Ayyappan, M.S. Swaminathan and M.V. Rao are seen interacting on 1 Jul 2014.

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Director, NAARM, Dr K.V. Raman, Director (Retired), NAARM, Hyderabad, Drs C. Prasad, B.N. Mathur and A. Padma Raju, Vice-Chancellor, ANGRAU, Hyderabad on 1 Jul 2014.

Dr M.V. Rao, Special Director-General (Retired), ICAR, on 1 Jul 2014 and 23 Aug 2014.

Smt Mariamma Thomas, Director, Postal Services, Andhra Pradesh Postal Circle, Hyderabad on 1 Jul 2014.

DR M.S. Swaminathan, Emeritus Chairman, M.S. Swaminathan Research Foundation, Chennai on 1 Jul 2014.

Dr S. Ayyappan, Secretary, Department of Agricultural Research and Education (DARE) and Director-General, ICAR, on 1 Jul 2014, 24 Aug 2014, and 18 Jan 2015.

Dr Gurbachan Singh, Chairman, Agricultural Scientists Recruitment Board, New Delhi, Dr Arvind Kumar, Deputy Director-General (Agricultural Education), ICAR, Dr Swapan Datta, Deputy Director-General (Crop Sciences), ICAR, New Delhi, Dr A.K. Sikka, Deputy Director-General (NRM), ICAR, New Delhi, Dr E.A. Siddiq, Retired Deputy Director-General (Crop Sciences), ICAR, Drs S.P. Tiwari, Retired Deputy Director-General (Agricultural Education), ICAR, Dr J.C. Kalyal, Former

Smt Poonam Malakondaiah, IAS, Agricultural Production Commissioner and Principal Secretary, Government of Telangana on 16 Jul 2014.



Dr Panjab Singh visited ICAR-NAARM on 20 Feb 2015.

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Drs R.B. Singh, Chairman (Retired), ASRB, New Delhi, M.V. Rao and Mahtab S. Bamji, INSA Honorary Scientist, Director Grade Scientist (Retired), National Institute of Nutrition, Hyderabad on 23 Aug 2014.

Shri R. Rajagopal, IAS, Additional Secretary, DARE and Secretary, ICAR, on 27 Dec 2014 and 23 Jan 2015.

Dr Panjab Singh, Secretary (Retired), Department of Agricultural Research and Education (DARE) and Director-General, ICAR, on 20 Feb 2015.

Dr V.N. Sharda, Member, Agricultural Scientists Recruitment Board, New Delhi, on 30 Mar 2015.



Dr V.N. Sharda spoke to the trainees of FOCARS 101 on 30 Mar 2015.

M. Ravi

Left: Drs R.B. Singh and Mahtab S. Bamji visited ICAR-NAARM on 23 Aug 2014.
Centre: Shri R. Rajagopal (left) interacted with the trainees of the EDP and FOCARS 101 on 23 Jan 2015.
Right: Dr Arvind Kumar visited ICAR-NAARM on 1 Jul 2014.

M. Ravi



Awards and Prizes

ICAR-NAARM Conferred Agriculture Leadership Award 2014

The ICAR-National Academy of Agricultural Research Management was conferred the 'Agriculture Leadership Award 2014' of the Agriculture Today Group under the category 'Academic Leadership' for "Innovative Leadership in Agriculture Research Management," by enhancing the capacities of individuals and institutions of the National Agricultural Research System (NARS). The Citation said "The stewardship provided by it through its capacity building endeavours have led to the development of a new generation of scientists and research leaders in the ICAR, Agricultural Universities, and other institutions involved in agricultural research and education. About 34,000 professionals of the NARS in India and those from other developing countries have been trained by the Academy through over 1,200 training programmes." Prof. P.J. Kurien, Hon'ble Deputy Chairman, Rajya Sabha, in the presence of Dr M.S. Swaminathan gave the award to ICAR-NAARM during the 7th Agriculture Leadership Summit, held in New Delhi on 27 Sep 2014. Dr D. Rama Rao, Director, received the award on behalf of ICAR-NAARM.

Prof. P.J. Kurien (right) gave the 'Agriculture Leadership Award 2014' to ICAR-NAARM on 27 Sep 2014. Dr D. Rama Rao, Director (left) received the award on behalf of ICAR-NAARM.



Courtesy: IITK

Left to right: Shri Rahul Dukale, Shri S.N. Manikanta Reddy, Kum Upma Dubey and Kum Navya Lalitha got prizes in competitions at the Indian Institute of Technology, Kharagpur. Dr Chandranath Chatterjee, Professor, IITK (centre) gave the prizes.

PGDMA Students Win Prizes

The students of the 2013-15 batch got the following prizes:

Shri Sudama Thakur was selected by the Indian Institute of Management, Ahmedabad as the 'IIMian for day in 2014' in a competition held at IIM, Ahmedabad on 12 Oct 2014.

Shri Devesh Tewari got the second prize in the national level essay competition, conducted by the Chirala Engineering College, Chirala, Andhra Pradesh on "My Role as a Citizen of India – to Make Happy and Peaceful Country" during India's 68th Independence Day celebrations on 15 Aug 2014.

Shri S.N. Manikanta Reddy, Shri Rahul Dukale, Kum Navya Lalitha and Kum Upma Dubey, students of the 2014-16 batch got the following prizes in competitions held at 'Prakriti – Agri and Food Innovation Festival 2015' held at the Indian Institute of Technology, Kharagpur from 12 to 15 Mar 2015:

First prize in B-Plan Competition for "Development of Strategy for Jell-O Processing In India," Second prize in case study presentation "To Reduce the Wastage of Agricultural Produce in India through the use of Cold Storages;" and the third prize in the poster presentation categories for "Development of a Low-cost Manual Grader for Round Shaped Fruits and Vegetables."

Distinguished Scientist Award

Dr S. Ravichandran for his outstanding contribution in the field of 'Statistics' the during National Conference on "Emerging Challenges and Opportunities in Biotic and Abiotic Stress management 2014" held at DRR, Hyderabad on 14 Dec 2014.

Best Poster and Best Paper Prizes

Drs Ranjit Kumar, K. Srinivas, N. Sivaramane and Christian Boebber got the 'Best Poster Presentation' for "India Poised to lead Maize Export in Asia: Need Multi-level Innovation in Value Chain" at the 12th Asian Maize Conference and Expert Consultation on Maize for Food, Feed Nutrition and Environmental Security during 30 Oct to 1 Nov 2014, in Bangkok, Thailand.

Dr Surya Rathore got the Best Paper award for "Boosting rural economies through local economic de-

velopment; Policy initiatives by the Indian Society of Extension Education, IARI, New Delhi during the National Seminar on Extension Innovations and Methodologies for Market-led Agricultural Growth and Development on 28 Feb 2015.

Dr P. Venkatesan received the 'Best Paper' for "Perceived effectiveness of tribal farmers towards indigenous tribal agricultural practices" in the National Seminar on 'Extension Management Strategies for Sustainable Agriculture – Challenges and Opportunities organized by the Society of Extension Education, Coimbatore on 13 Dec 2014 and for "An empirical model for development, dissemination and promotion of indigenous practices" in the National Seminar on 'Recent Trends in Eco-friendly Farming Practices for Food Security,' organized by the Faculty of Agriculture and A.H and Centre for Indigenous Knowledge in Agriculture, Gandhigram Rural Institute, on 13 Mar 2015.

ICAR-NAARM Wins Prizes in ICAR Sports Meets

ICAR South Zonal Sports Meet 2014

In the ICAR South Zonal Sports Meet 2014 held at the ICAR-Indian Institute of Horticultural Research (IIHR), Bengaluru from 13 to 17 Oct 2014, Smt K.K. Rukmani Ammal, of the National Academy of Agricultural Research Management, Hyderabad, got the 'Best All-rounder Trophy.' She got the first prize in 'Discus,' second prize in 'Shotput,' and was the winner in 'Shuttle Badminton (singles),' 'Carrom,' and 'Table Tennis (singles).' The ICAR-NAARM men's team secured the second prize in 'Table Tennis.' In other individual

Smt Rosakutty, Indian Olympian and Arjuna Awardee (left) gave the 'Best All-rounder Trophy' of the ICAR South Zonal Sports Meet 2014 to Smt K.K. Rukmani Ammal.



Courtesy: ICAR-IIHR, Bengaluru

events, Shri M.K. Samson got the first prize in 'Discus' and the second prize in both 'Shotput' and 'Javelin.' Dr A. Debnath got the third prize in 'Javelin.'

Smt

Rosakutty, Indian Olympian and Arjuna Awardee distributed the prizes.

ICAR Inter-Zonal Sports Meet 2015

The ICAR-NAARM participated in the ICAR Inter-Zonal Sports Meet held at the ICAR-National Dairy Research Institute, Karnal from 9 to 13 Mar 2015. Smt K.K. Rukmani Ammal of the National Academy of Agricultural Research Management, Hyderabad, was awarded the 'Player of the Tournament Award' for securing the highest points in the meet. She also got the first prizes in 'Discus' and 'Shotput' and was the winner in 'Shuttle Badminton (singles)' and 'Carrom (singles).' Dr A.K. Srivastava, Director, ICAR-National Dairy Research Institute distributed the prizes.

Dr A.K. Srivastava (right) gave the 'Player of the Tournament Award' of the ICAR Inter-Zonal Sports Meet to Smt K.K. Rukmani Ammal.

Courtesy: ICAR-NDRI, Karnal



Personnel

Staff Strength as on 31 March 2015

Category	Sanctioned	Filled	Vacant
Scientist	60	26	34
Technical	43	39	4
Administrative	49	38	11
Supporting	39	37	2
Sub-total	191	140	51
RMP	2	2	0
Total	193	142	51

Director's Office

S.L. Goswami Director (till 30 Jun 2014)
D. Rama Rao Director (from 1 Jul 2014)
T. Laxman STA (Driver)
K. Radha Sujatha Stenographer Grade-III
C. Venkatesham SSS

Joint Director's Office

R. Kalpana Sastry Joint Director
T.V. Ramdas Personal Assistant
G.V. Bikshapathi SSS

N.H. Rao Principal Scientist
Ravi Viswanathan STO (Editor-
..... cum-Information Officer)

Human Resources Management

P. Manikandan Principal Scientist and Head
R.V.S. Principal Scientist
K.H. Rao Principal Scientist
S. Sesha Sai Personal Assistant
Nazia Parveen SSS

Research Systems Management

S.K. Nanda Principal Scientist (till 28 Feb 2015)
P. Manikandan Principal Scientist and
..... Head (I/c) from 1 Mar 2015

K. Kareemulla Principal Scientist
K. Srinivas Principal Scientist
M. Ganesh Kumar SSS

Information and Communication Management

S.K. Soam Principal Scientist and Head
A. Dhandapani Principal Scientist
S. Ravichandran Principal Scientist
M. Balakrishnan Senior Scientist
P.D. Sreekanth Senior Scientist
V.V. Sumanth Kumar Scientist (on deputation)
K.V. Kumar ACTO (Statistical Assistant)
S. Raju Kumar ... TO (Electronic Computer Operator)
V. Shailaja Stenographer Grade III
P. Bal Raj SSS
P. Yadaiah SSS

Agribusiness Management

G.P. Reddy Principal Scientist and Head (I/c)
P. Ramesh Principal Scientist and
..... Head (I/c) from 20 Feb 2015
Ranjit Kumar Principal Scientist (on
..... deputation from 16 Jul 2014)
B. Ganesh Kumar Principal Scientist
Manoj P. Samuel Principal Scientist
N. Sivaramane Senior Scientist

P.C. Meena Scientist (till 23 Apr 2014);
..... Senior Scientist (from 24 Apr 2014)
A. Mercy Personal Assistant
S. Shakuntala SSS

Education Systems Management

K.M. Reddy Principal Scientist and
..... Head (I/c) (till 31 May 2014)
P. Ramesh Principal Scientist and Head (I/c)
D. Thammi Raju Principal Scientist
G.R.K. Murthy Principal Scientist
S. Sundar Raj STA (Media Operator)

Extension Systems Management

N. Sandhya Shenoy Principal Scientist and
..... Head (I/c)
B.S. Sontakki Principal Scientist
V.K.J. Rao Principal Scientist
R. Venkattakumar Principal Scientist
..... (till 28 Oct 2014)
Surya Rathore Principal Scientist
P. Venkatesan Senior Scientist (from 5 May 2014)
Ch. JanardhanRao CTO (Video Cameraman)
P. Anand Kumar Personal Assistant
N. Naresh Kumar TO (VCR-cum-
..... Telecine Operator)
G. Pentaiah SSS

Academic Cell

P. Namdev ACTO (Graphic-cum-Visualizer)
P. Vijender Reddy ACTO (Research Assistant)
G. Aneja STO (Assistant Editor)
M. Shekhar Reddy STO (Dark Room Assistant)
L.M. Ahire STO (Horticultural
..... Technical Assistant)
M. Ravi STO (Photographer-cum-Artist)
D. Rajagopal Rao TO (Media Operator)
Pitla Srinivas STA (Proof Reader)
Prashant Gaikwad TA (Binder)
S. Swamy Asst.Gest.Opr.
P.G. Kohad AAO
K.K. Rukmani Ammal Personal Assistant
C. Chandramouli SSS

C. Narsu Bai SSS
B.Ashok SSS

Library

V. Murali CTO (Garden Superintendent) (I/c)
S. Venkatesham Xerox M/c Operator
G. Anasuya SSS
V. Saroja SSS
S.N. Rasool SSS

Health Centre

A. Debnath CTO (Medical Officer)
S. Narsimha SSS

Hostel Services

Zameer Ahmed CTO (Manager, Hostel Services)
Sham Bahadur STO (Catering in-charge)
Savithri Murali TO (Catering in-charge)
B.K. Venkat Ram .. Senior Technician (Pump Driver)
K.Pentaiah SSS
C. Kausalya SSS

Farm Services including Housekeeping Services

V. Murali CTO (Garden Superintendent)
M.A. Basith ACTO (Jr. Farm Superintendent)
A.C.P.R.N. Rao STA (Lineman)
C. Bickshapathi LDC
B.Bharathamma SSS
R. Sathaiah SSS
Phool Kumar SSS
Kumba Satyanarayana SSS
L. Satyanarayana SSS
G. Dasaratha SSS
B. Shanthamma SSS
M. Krishnaiah SSS
I. Bharathamma SSS
M. Yadamma SSS
T. Jangamma SSS

Civil Engineering

Sohail A. Khan ACTO (Junior Engineer-Civil)
N. PrabhakarRao Technical Assistant
..... (Plumber)
M. SrinivasaRao Technical Assistant
..... (Pump Driver)

K. Veeranasaiiah Technical Assistant
..... (Carpenter-cum-Painter)
K. Daniel SSS

Electrical

L. Ramesh Technical Officer (Electrical)
K. Obulapathi TO (Technician Electrical)
B. S. N. Murthy TO (Technician Electrical)
M. K. Shamshuddin TO (Technician Electrical)
M. K. Sonkusare TO (Technician Electrical)
K. Shivaiah TO (Technician)

Transport

N. R. Nageswara Rao TO (Audio-visual Operator)
G. Muthyalu Technical Assistant (Driver)
N. Ashok Technical Assistant (Driver)
R. Siva Prasad Senior Technician (Driver)

Official Language Cell

J. Renuka Assistant Director (OL)
Rajashri Bokde UDC
Khalid SSS

Administration

Sanjay Kant Joint Director and Registrar
P. Mohan Singh STO (Computer Assistant)
..... (from 3 Apr 2014)
P. Neelakantam AAO
N. Raghunath Private Secretary
M. Dinesh Assistant
G. Raj Reddy Assistant
C. Phani Raj Assistant

P. Srinivasu Assistant
G. Jessie Ecclicia Assistant
C. Julius Samuel Assistant
K.R. Ghanshyam Assistant
M. Venkatesh Personal Assistant
T. Vanisri Personal Assistant
..... (on deputation with UIDAI)
Y. Anuradha Personal Assistant
M. Sridhar UDC
..... (on deputation with UIDAI)
P. Venkatesh UDC
M. K. Samson UDC
K. Suryanarayana UDC
P. Swamy LDC
M. Narsing Rao LDC
M. Ashok LDC
N. Sukunamma SSS
Kyasam Satyanarayana SSS
B. Premdas SSS

Finance, Audit and Accounts

D.D. Verma Comptroller
N. Vijaya Lakshmi Junior Accounts Officer
T. Srinivas Assistant
B. Padma Saroja Assistant
R. Chandra Babu Assistant
Y. Gayathri UDC
S. Shanthi Stenographer Grade III
S. Jangaiah SSS
J. Chandraiah SSS

Retired on Superannuation

Dr S.L.Goswami,
Director on
30 Jun 2014



Dr K.M. Reddy,
Principal Scientist on
31 May 2014



Dr S.K. Nanda,
Principal Scientist on
28 Feb 2015



Smt Mani Bai,
Lower Division Clerk
on 30 Sep 2014





Projects and Finance

Programme Directors of CBP at ICAR-NAARM for 2014–15

Foundation Course for Agricultural Research Service (FOCARS)	P. Manikandan, B.S. Sontakki, N. Sandhya Shenoy, D. Thammi Raju
Foundation Course: State Agricultural Universities	P. Ramesh, K.H. Rao
Leadership Programmes	P. Manikandan, R. Kalpana Sastry, N.H. Rao, R.V.S. Rao, K.H. Rao
Refresher Courses/Summer Schools	K. Kareemulla, R. Venkattakumar, K. Srinivas, S.K. Nanda, P. Ramesh
Management Development Programmes/ Faculty Development Programmes	Manoj P. Samuel, R. Kalpana Sastry, S.K. Nanda, P.D. Sreekanth, S.K. Soam, A. Dhandapani, N. Sivaramane, S. Ravichandran, G.R.K. Murthy, D. Thammi Raju, B.S. Sontakki, N. Sandhya Shenoy, P. Ramesh, K.H. Rao, V.K.J. Rao, M. Balakrishnan, K. Srinivas,
Workshops	R. Venkattakumar, Manoj P. Samuel, G.P. Reddy, B.S. Sontakki, N. Sivaramane, S.K. Soam, M. Balakrishnan, R. Kalpana Sastry, R.V.S. Rao
Sponsored Programme (Off-Campus Programmes)	P. Manikandan, K.H. Rao, R. Venkattakumar, P.D. Sreekanth, D. Thammi Raju, G.R.K. Murthy, B.S. Sontakki, P. Venkatesan, Surya Rathore, K. Srinivas,
Orientation Programmes	P. Ramesh, D. Thammi Raju
International Programme	S.K. Soam, S.K. Nanda

Externally Aided Projects

Title of Project	Principal Investigator	Source of Funding
Implementing Agricultural Science and Technology Indicators (ASTI) data collection and policy analysis in India	R. Kalpana Sastry	IFPRI
IP Management and transfer/Commercialization of agricultural technology scheme	R. Kalpana Sastry	ICAR
TELAGE	G.R.K. Murthy	NICHE Area Scheme
Impact evaluation of RKVY funded of the research projects implemented by agricultural universities	N. Sivaramane	RKVY, Government of Telangana
Developing SAIDP plan for infrastructural development of agricultural research and extension	S.K. Soam	RKVY, Government of Telangana
Developing guidelines and methodologies for socio-economic assessment of LMOs	K. Srinivas	Research Information Systems

Research Projects at ICAR-NAARM

Project code	Title of Project	Principal Investigator
59	Knowledge systems for research policy and management for sustainable rural livelihoods security	N.H. Rao, S.K. Nanda, B.S. Sontakki, R. Venkattakumar, P.D. Sreekanth, K.V. Kumar
102	Development of PME Tools for ICAR Institutes	K. Srinivas, R. Kalpana Sastry
93	Accounting framework for water-energy-greenhouse emission nexus in peri-urban agriculture	Manoj P. Samuel, R. Venkattakumar, P.D. Sreekanth
75	Development of knowledge management portal for agrobiodiversity	M. Balakrishnan, S.K. Soam, P.D. Sreekanth
65	IP Management and transfer/commercialization of agricultural technology scheme	R. Kalpana Sastry
78	Agricultural sustainability in major agro-ecosystems	K. Kareemulla, R. Venkattakumar, Manoj P. Samuel
79	Developing strategy-based balanced score card for agricultural research	S.K. Nanda
81	Evaluation of collaborative communication tools in online environment	S.K. Soam, A. Dhandapani, G.R.K. Murthy, M. Balakrishnan, P.D. Sreekanth
85	Psychometric assessment of faculty of agricultural universities for developing perspective HRD Plan	P. Ramesh, R.V.S. Rao
89	Agribusiness education in NARS: Performance and challenges	G.P. Reddy, B.S. Sontakki, N. Sivaramane
90	Understanding consumer behaviour towards convenience foods	N. Sivaramane, A. Dhandapani, Ranjit Kumar, R. Venkattakumar
91	Development of decision support system for technology management	Manoj P. Samuel, G.R.K. Murthy
101	Feasibility framework for social media adoption in NARS	D. Thammi Raju, B.S. Sontakki, G.R.K. Murthy

(Continued)

Research Projects at ICAR-NAARM (concluded)

98	Assessment of application of statistical time series modeling and forecasting of prices of agricultural commodities	S. Ravichandran, A. Dhandapani, N. Sivaramane
99	Information system for All-India coordination research project on vegetables crops	A. Dhandapani
92	Inter-personal relationships in ICAR and their effect on job performance	R.V.S. Rao, K.H. Rao, P. Manikandan
94	Quality of work life in National Agricultural Research System	K.H. Rao, P. Manikandan, R.V.S. Rao
95	Workplace conflict management –Factors of conflict and styles of conflict management in the National Agricultural Research System	P. Manikandan, R.V.S. Rao, K.H. Rao
97	Impact of producer companies' in fostering community entrepreneurship	P. Venkatesan, B.S. Sontakki, Manoj P. Samuel, N. Sandhya Shenoy
96	Knowledge platform for farmers	N. Sandhya Shenoy, V.K.J. Rao, V.V. Sumant Kumar, D. Thammi Raju
100	Technology enhanced learning in agricultural education (TELAGE)	G.R.K. Murthy, D. Thammi Raju, P. Ramesh
103	Implementing agricultural science and technology indicators (ASTI) data collection and policy analysis in India	R. Kalpana Sastry, S.K. Nanda, B. Ganesh Kumar

Financial Statement for 2014–15 (Indian ₹ in lakhs)(As on 31 Mar 2015)

Plan

Head of Account	Revised Estimates 2014-15	Releases	Progressive Expenditure	Balance
Capital				
Works	120.00	120.00	120.00	0.00
Equipment	70.0	70.00	70.00	0.00
Information Technology	40.0	40.00	39.77	0.23
Furniture	5.0	5.00	5.00	0.00
Books and journals	75.0	75.00	75.00	0.00
Vehicles and vessels	0.0	0.00	0.00	0.00
Total capital	310.00	310.00	309.77	0.23
Revenue				
Establishment	390.38	400.00	390.38	0.00
Travelling allowance	138.00	138.00	137.95	0.05
Research and operational	70.00	70.00	69.75	0.25
Administrative expenses	230.0	230.00	229.77	0.23
HRD	10.00	10.00	9.99	0.01
Miscellaneous expenses	20.00	20.00	19.79	0.21
Total revenue expenses	858.38	868.00	857.63	0.75
Total expenditure capital + revenue	1,168.38	1,178.00	1,167.40	0.98

Resource Generation (Indian ₹ in lakhs)(As on 31 Mar 2015)

Target:	79.7
Generation:	208.02

(Continued)

Financial Statement for 2014-15 (Indian ₹ in lakhs)
(As on 31 Mar 2015) (concluded)

Non-Plan

Head of Account	Revised Estimates 2014-15	Releases	Progressive Expenditure	Balance
Capital expenditure				
Minor works	0.00	0.00	0.00	0.00
Equipment	6.00	6.00	4.77	1.23
Furniture	0.00	0.00	0.00	0.00
Others	0.00	0.00	0.00	0.00
Total capital	6.00	6.00	4.77	1.23
Grant-in-aid salaries (Revenue)				
Establishment charges				
Salaries including LSP&PF	1,222.00	1,222.00	1,221.97	0.03
Wages	131.10	131.10	130.13	0.97
OTA	0.40	0.40	0.40	0.00
Total establishment expenses	1,353.50	1,353.50	1,352.50	1.00
Grant-in-aid general (Revenue)				
Pension and other Retirement benefits	270.00	270.00	270.00	0.00
Travelling allowance	7.00	7.00	6.96	0.04
Research and operational	13.00	13.00	12.89	0.11
Administrative expenses	504.85	504.85	503.68	1.17
HRD	0.00	0.00	0.00	0.00
Miscellaneous expenses	17.00	17.00	16.83	0.17
Total general expenses	811.85	811.85	810.36	1.49
Total revenue (Grant-in-aid: salaries + Grant-in-aid: general)	2,165.35	2,165.35	2,162.86	2.49
Total expenditure capital + revenue	2,171.35	2,171.35	2,167.63	3.72
Loans and advances	10.00	10.00	9.95	0.05

Acronyms

ADG	: Assistant Director-General	DDG	: Deputy Director-General
ADNAT	: Association for the Promotion of DNA Fingerprinting and other DNA Technologies	EDP	: Executive Development Programme
AHP	: Analytic Hierarchy Process	FDP	: Faculty Development Programme
AICRP	: All-India Coordinated Research Project	FET	: Field Experience Training
AICRP-VC	: All-India Coordinated Research Project on Vegetable Crops, Varanasi	FOCARS	: Foundation Course for Agricultural Research Service
AICSIP	: All-India Coordinated Sorghum Improvement Project	FOCFAU	: Foundation Course for Faculty of Agricultural Universities
ANGRAU	: Acharya N.G. Ranga Agricultural University, Hyderabad	GFAR	: Global Forum on Agricultural Research
ASCI	: Administrative Staff College of India	GFR	: General Financial Rules
ASRB	: Agricultural Scientists Recruitment Board	GHG	: Greenhouse Gas
BMD	: Bone Mineral Density	GIS	: Geographical Information System
CAS	: Career Advancement Scheme	GIS	: Geographic Information System
CCMB	: Centre for Cellular and Molecular Biology, Hyderabad	ha	: Hectare
CDAC	: Centre for Development of Advanced Computing	HOD	: Head of Division
CESS	: Centre for Economic and Social Studies, Hyderabad	HRD	: Human Resource Development
CMERTI	: Central Muga Eri Research and Training Institute, Jorhat	HYPM	: Half Yearly Progress Monitoring
COL	: Commonwealth of Learning	IAS	: Indian Administrative Service
CPB	: Capacity Building Programmes	ICAR	: Indian Council of Agricultural Research
CSIR	: Council for Scientific and Industrial Research	ICAR-ARS	: Indian Council of Agricultural Research-Agricultural Research Service
DARE	: Department of Agricultural Research and Education	ICAR-CAZRI	: ICAR-Central Arid Zone Research Institute, Jodhpur
		ICAR-CIAE	: ICAR-Central Institute of Agricultural Engineering, Bhopal
		ICAR-CRIDA	: ICAR-Central Research Institute for Dryland Agriculture, Hyderabad
		ICAR-DOPR	: ICAR-Directorate of Oil Palm Research, Pedavegi

ICAR-DOR	: ICAR-Directorate of Oilseeds Research, Hyderabad	IPR	: Intellectual Property Right
ICAR-DRR	: ICAR-Directorate of Rice Research, Hyderabad	IRC	: Institute Research Council
ICAR-DRWA	: ICAR-Directorate of Research on Women in Agriculture, Bhubaneswar	ISTM	: Institute of Secretariat Training and Management
ICARGOA	: ICAR Research Complex for Goa, Goa	IT	: Information Technology
ICAR-IARI	: ICAR-Indian Agricultural Research Institute, New Delhi	ITMU	: Intellectual Property and Technology Management Unit
ICAR-IASRI	: ICAR-Indian Agricultural Statistics Research Institute, New Delhi	JNTU	: Jawaharlal Nehru Technological University, Hyderabad
ICAR-IIHR	: ICAR-Indian Institute of Horticultural Research, Bengaluru	KVAFSU	: Karnataka Veterinary, Animal and Fishery Sciences University, Bidar
ICAR-IINRG	: ICAR-Indian Institute of Natural Resins and Gums, Ranchi	KVK	: Krishi Vigyan Kendra
ICAR-IIVR	: ICAR-Indian Institute of Vegetable Research, Varanasi	MPKV	: Mahatma Phule Krishi Vidyapeeth, Rahuri
ICAR-NAARM	: ICAR-National Academy of Agricultural Research Management, Hyderabad	MPUAT	: Maharana Pratap University of Agriculture and Technology, Udaipur
ICAR-NDRI	: ICAR-National Dairy Research Institute, Karnal	MSSRF	: M.S. Swaminathan Research Foundation
ICAR-NEHR	: ICAR Research Complex for North Eastern Hill Region	NAAS	: National Academy of Agricultural Sciences, New Delhi
ICAR-PDP	: ICAR-Project Directorate on Poultry, Hyderabad	NAIP	: National Agricultural Innovation Project
ICT	: Information and Communication Technology	NARS	: National Agricultural Research System
IFPRI	: International Food Policy Research Institute	NASF	: ICAR-National Agricultural Science Fund formerly the National Fund for Basic, Strategic and Frontier Application Research (NFBSFARA)
IISC	: Indian Institute of Science, Bengaluru	NGO	: Non-Governmental Organization
IIT	: Indian Institute of Technology	NRSC	: National Remote Sensing Centre
IMC	: Institute Management Committee	NVPCR	: National Commission for Protection of Child Rights
		PA	: Personal Assistant
		PGDMA	: ICAR-NAARM Post-graduate Diploma in Management-Agriculture

PGD-TMA	: ICAR-NAARM Post-graduate Diploma in Technology Management in Agriculture	RAC	: Research Advisory Committee
PJTSAU	Professor Jayashankar Telangana State Agricultural University, Hyderabad	RKVY	: Rashtriya Krishi Vikas Yojana
PME	: Priority Setting, Monitoring and Evaluation	RMP	: Research Management Position
PPP	: Public-private-partnership	SAS	: Statistical Analysis System
PPS	: Principal Private Secretary	SAU	: State Agricultural University
PS	: Private Secretary	SOC	: Senior Officers' Committee
QRT	: Quinquennial Review Team	SVVU	: Sri Venkateswara Veterinary University, Tirupati
R&D	: Research and Development	TCS	: Tata Consultancy Services
		UNDP	: United Nations Development Programme
		USIEF	: United States-India Educational Foundation





संकाय भवन
FACULTY BUILDING
प्रशासन भवन
ADMINISTRATION BUILDING
स्नातकोत्तर परिसर
PG COMPLEX

संकाय भवन
प्रशासन भवन
स्नातकोत्तर परिसर

