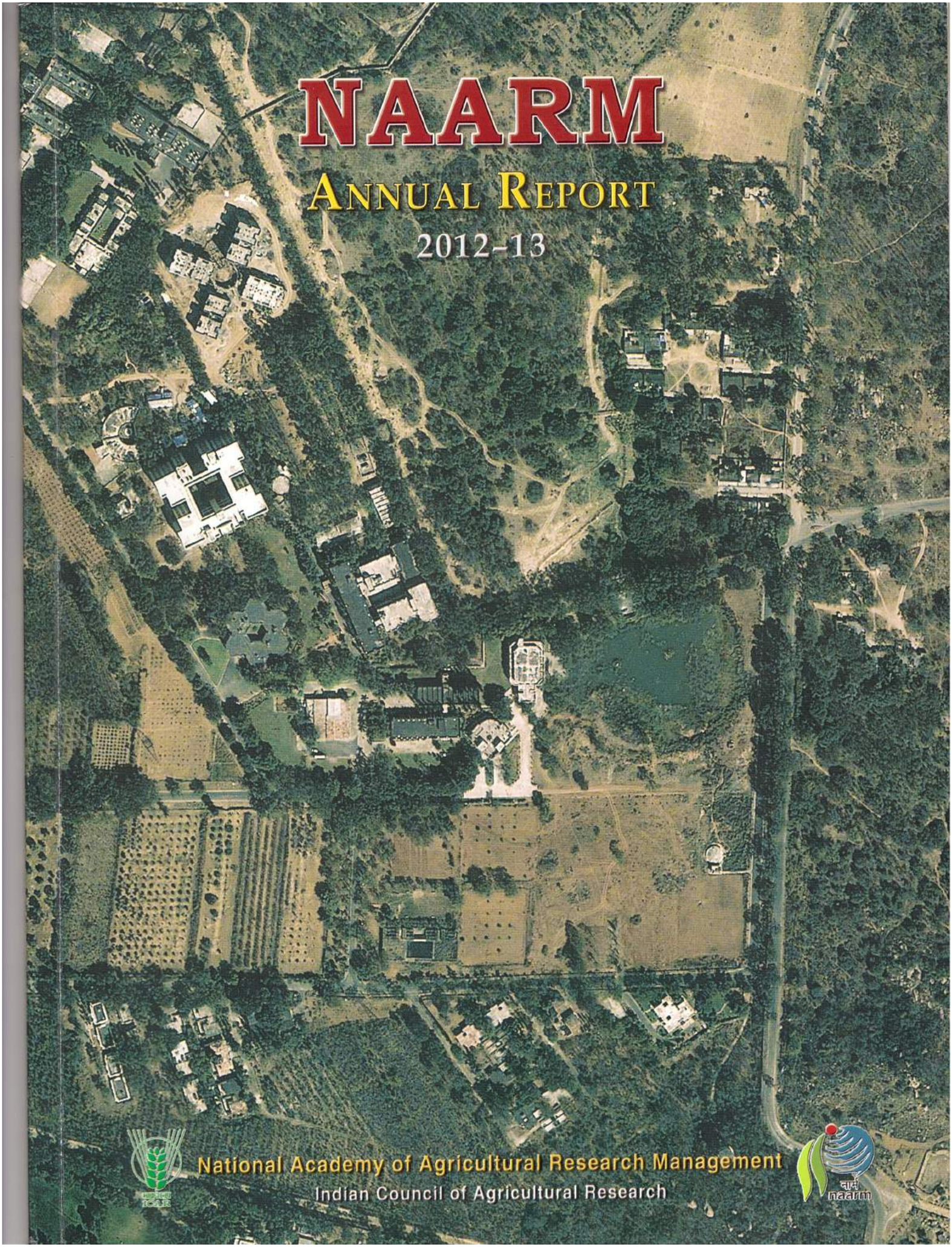


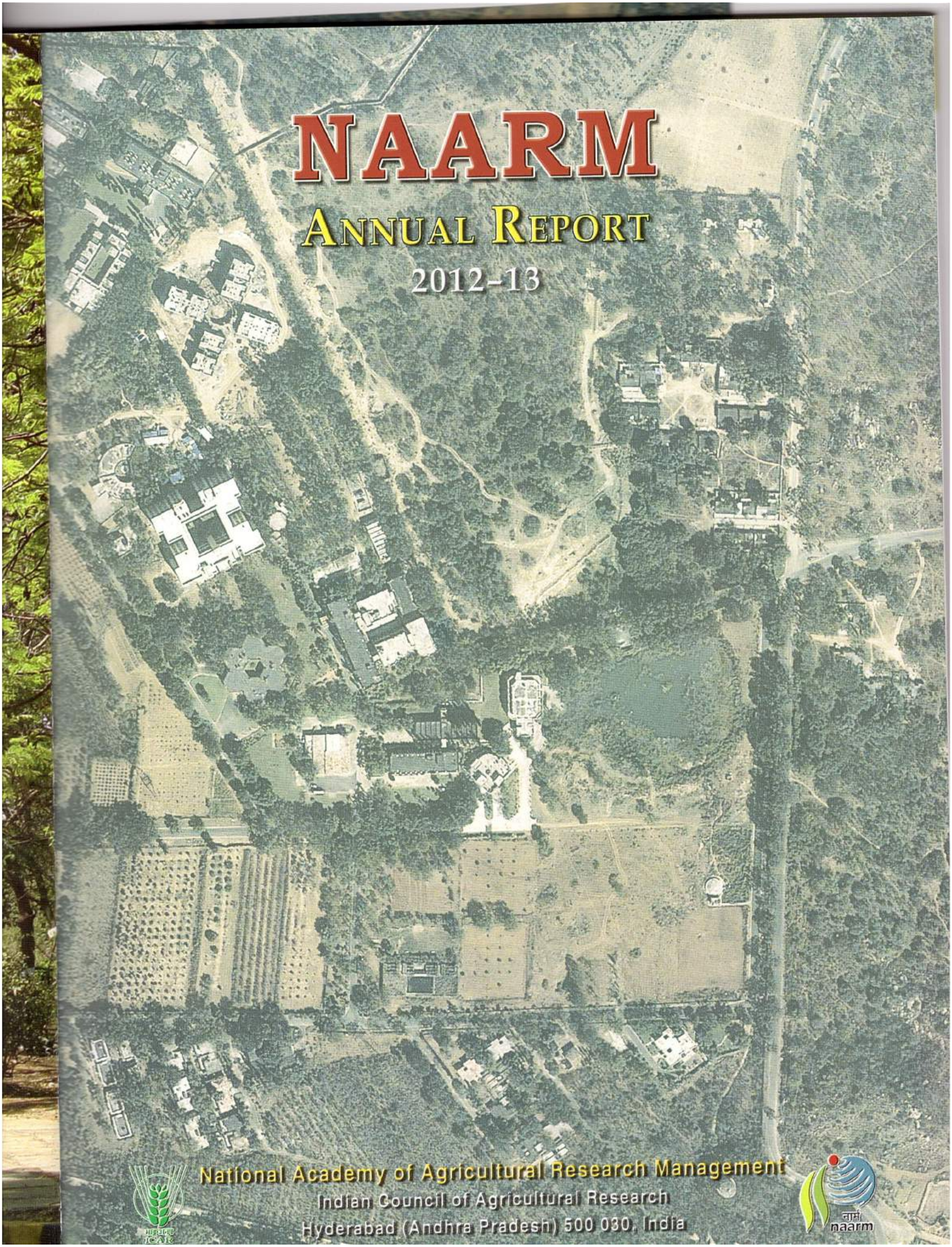
NAARM

ANNUAL REPORT

2012-13

National Academy of Agricultural Research Management

Indian Council of Agricultural Research



NAARM

Annual Report

2012-13

National Academy of Agricultural Research Management
Indian Council of Agricultural Research
Hyderabad (Andhra Pradesh) 500 030, India

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Cover 1, 4: A satellite image of the campus of NAARM in Hyderabad (Map Courtesy: Google, DigitalGlobe)

Cover 2, 3: A view of the avenue in the NAARM campus in Hyderabad (Photo: Ravi Viswanathan)

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Preface

THE National Academy of Agricultural Research Management is the only institution of its kind in the world, established with the primary purpose of building capacity of individuals and institutions of the National Agricultural Research System (NARS) to enable them to adapt to change through continuous innovation. The Academy has contributed significantly to the development of a new generation of scientists and research leaders in the ICAR, and NARS. It has also facilitated several new policies, institutional mechanisms, and initiatives leading to enhanced capacities in NARS for research, education and extension management. The strength of the Academy lies in its unique blend of training, research and education activities that interactively reinforce each other. No other institution, public or private, addresses the wide needs of capacity building of NARS at the scale and range offered by the Academy (Foundation Training to Senior Executive Development for ICAR, State Agricultural Universities, other government organizations, international NARS, NGOs, and the private sector). A new dimension of post-graduate education in management was introduced during the XI Plan, to revitalize both capacity building and research and develop a new generation of leaders with greater understanding of the interconnections between technology, farmers, agribusiness and consumers. The Academy's unique position in NARS has also made it an apt platform for ICAR to internalize, facilitate and enhance several of its organizational transformation initiatives like leadership development, training policy, PME, IP management, e-learning, performance assessment, several institutional processes of NAIP, NFBSFARA, international training of scientists in frontier areas of science, and many others. These initiatives have also contributed significantly to the collaborative research, training and education capacities of the faculty of NAARM, and enhanced their interface both with institutions of NARS as well as diverse national and global organizations.

The Academy continued its innovative activities in capacity building, research, education and policy support. Several enhancements were introduced in leadership development and institutional management. These included new emphases on developing Plan proposals, greater sensitization to institutional processes of developing people, procurement and vigilance systems, PME and technology management. The new model of FOCARS, which extended its scope beyond NAARM to training within institutions of ICAR where new entrants of ARS are placed, took firm roots. The partner institutions of ICAR have more strongly internalized the institutional and attachment trainings of the new ARS scientists into their institutional processes. Keeping in view the strong and persistent demand for foundation courses and professional training by the SAUs, several off-campus programmes were organized at campuses spread across the country. The Academy's research initiatives in organizational change and human resources management, training impact assessment, research and technology management, information and knowledge management, have led to a greater proportion of publications in international journals, international collaboration, sponsorships and improved resources for capacity building. The expertise of the faculty in several domains, particularly organizational behaviour and change, intellectual property and technology management, information management, e-learning, agricultural supply chain management and others were much sought after by other organizations for capacity building, consultancies and lead and key note speaker assignments in various fora. The post-graduate education programmes, namely, the two-year AICTE approved and residential programme in agribusiness management (PGDMA), and the one year distance programme in Technology Management in Agriculture (PGD-TMA) in association with the University of Hyderabad have become more acceptable to students and professionals across the country as reflected in the numbers and quality of the student intake. The final placements of the

2010-12 batch and the summer internships of the 2012-14 of PGDMA point to greater acceptance by the industry of the relevance and quality of the education programmes.

A significant feature was the completion of the ICAR appointed 6th Quinquennial Review Team's (2006-12) review of the Academy under the Chairmanship of Dr K.V. Raman, former Member, ASRB. Nearly all the recommendations of the QRT were accepted by ICAR and were incorporated into the XII Plan proposals of the Academy. The Academy acknowledges the efforts of the Chairman Dr K.V. Raman and Members of the QRT, Dr Mrutyunjaya, Dr Sudha Rao, Dr P.N. Mathur, Dr B.R. Virmani and Dr Kiran K. Sharma for carrying out the intensive review of the past activities and in making its recommendations for the future programmes of the Academy.

The Academy received unstinted and positive support in all its endeavours from the ICAR. We would like to express our sincere gratitude to Dr S. Ayyappan, Secretary, Department of Agricultural Research, and Director-General, ICAR, for extending encouragement, continuous support, and positive guidance towards all the initiatives of the Academy. We are also thankful to Dr Arvind Kumar, Deputy Director-General (Agricultural Education), for providing full support in strengthening the activities of the Academy. The support extended by the Additional Secretary, DARE and Secretary, ICAR, as well the Personnel Division and Financial Division is gratefully acknowledged. We are also grateful to the Chairman and Members of the Academy's Research Advisory Committee (RAC) and the Institute Management Committee (IMC) for their advice and support in furthering our activities and reach.

In future, the challenges faced by NARS will only intensify and become more complex. Projections for the agriculture sector to 2050 target a four fold increase in land productivity, three fold increase in water productivity, doubling of energy-use efficiency, six fold increase in labour productivity, and lowering of carbon emissions to mitigate the impacts of climate change. These will need to be achieved in the context of diminishing land and water resources, emerging concerns for national and global food security, globalization and dynamic markets, and concerns for inclusive growth and sustainable development. The institutions of NARS will need to dynamically respond to the emerging complexities and challenges by transforming into more innovative, efficient and effective knowledge driven organizations. NAARM, with its unique status as an institution for learning and capacity building, that straddles the interface between research, capacity building, education, technology management and policy, is uniquely placed to address the future challenges of institutional change.

I acknowledge the efforts of my colleagues, Drs N.H. Rao, Kalpana Sastry, P. Manikandan, S.K. Soam, K.M. Reddy, G.P. Reddy and Sandhya Shenoy in bringing out this report. All the faculty members deserve appreciation for their timely supply of information. I also take this opportunity to thank the technical, administrative and supporting staff as well as others for their meaningful contributions to the Academy in all its endeavours. Ravi Viswanathan, Editor-cum-Information Officer deserves appreciation for editing, conceptualizing, and processing the information, and giving a novel look and presentation to this Annual Report.

This Annual Report gives detailed information on the activities of the Academy that will be useful to Research Managers, Scientists, Administrators, Students, and other Stakeholders of the Academy for seeking its services and partnering with us in our future endeavours.

(S.L. Goswami)
Director

Contents

Executive Summary

NAARM conducted 62 capacity building programmes for 1,730 participants. These included two Foundation Courses for Agricultural Research Service (FOCARS 96 and FOCARS 97), two Executive Development Programmes for Leadership Development, two Management Development Programmes (MDP) for Leadership Development (Pre-RMP), two MDP for Agricultural Research Management (for HODs), three Refresher Courses on Agricultural Research, 10 MDP/ Faculty Development Programmes, 21 Workshops and 18 sponsored (off-campus) programmes that included the Indian Institute of Technology, Kharagpur, State Agricultural Universities, ICAR institutes and other institutions.

Workshops such as "Need Assessment of Faculty and Scientists of Agricultural Universities for Academic Excellence," "Winning Research Proposals and Education Policy and Planning for Promoting Innovation in Agriculture," brought out new objectives for discussion and implementation.

In the research project on "Enhancing Resilience of Agriculture to Climate Change," focus group discussions were held in different Mandals in East Godavari district of Andhra Pradesh.

Consumer buying behaviour and preferences in wholesale *mandis* in Chennai, Coimbatore and Puducherry was collected from 25 farmers, 10 market intermediaries including modern retails who were involved in selling various commodities and vegetables as part of the project "Growth of Food Retail Change and Supply Chain Management of Agriculture."

Geographical information system was used to develop a case study using a registered geographical indicator Guntur Sanam Chilli.

Results of collaborative communication tools in online environment among 359 respondents, most of them agricultural researchers with doctoral degrees, and between 35 years and 45 years of age revealed that a significant number knew about 200 web-based communication tools but never tried it.

Development of an information system for AICRP projects is under refinement.

A database with bibliographic and technology mapping-based on extensive analysis of patent data sets in veterinary immunobiologicals, and applications in disease management, technology transfers, market trends, technology diffusion market drivers and consumers is under development.

A project on "Assessment and Development of Organizational Citizenship Behaviour for Promoting Efficiency and Effectiveness in NARS" was undertaken to promote organizational citizenship behaviour among scientific personnel.

A case-let for capacity building was developed based on the information collected from research institutes for the project "Organizational Change for Promoting Innovation through Research Consortia."

The NAIP helpdesk undertook a study to assess experiences of NAIP sub-projects.

A study is being carried out in India, Bangladesh, China, Indonesia and Pakistan to examine the current maize situation in Asia as part of the MAIZE-CRP by CIMMYT, Mexico. Focussed group discussions were held in five locations in Bihar, Madhya Pradesh, Karnataka, Rajasthan and Uttar Pradesh. NAARM is the lead centre.

A system dynamics simulation model for utilization of fly ash was developed.

Recommendations were evolved for improving the visibility, planning, management, evaluation, training transfer and overall impact of CAFT training programmes.

NAARM PGDMA students (2010-12) were placed in different organizations with salary offers of more than ₹ six lakhs.

The fourth PGDMA (2012-14) commenced on 2 Jul 2012.

The certificate to the students who had successfully completed the PGD-TMA-2011 was distributed on 4 Sep 2012.

The 6th QRT of NAARM evaluated the progress from 2006 to 2012 and submitted its report on 2 Jan 2013.

The meeting of the Research Advisory Committee, Institute Management Committee, Academic Committee, and Institute Research Council were held.

NAARM partnered with the Andhra Pradesh Technology Development Corporation as a knowledge partner for AP-TEC 2012 @ Guntur.

The Director, NAARM participated in a side event "Caravans of Biodiversity: India's Livestock Keepers, their Breeds and Products," during the Conference of the Parties (COP-11) to the Convention on Biological Diversity at Hyderabad on 12 Oct 2012.

The XXI Regional Committee Meeting of the ICAR Zone-II was held at NAARM on 19 Jul 2012.

A round table discussion on open educational resources was held at NAARM on 27 Feb2013.

The NAARM Foundation Day, Hindi fortnight celebrations, and the first Alumni meet of NAARM-PG were held.

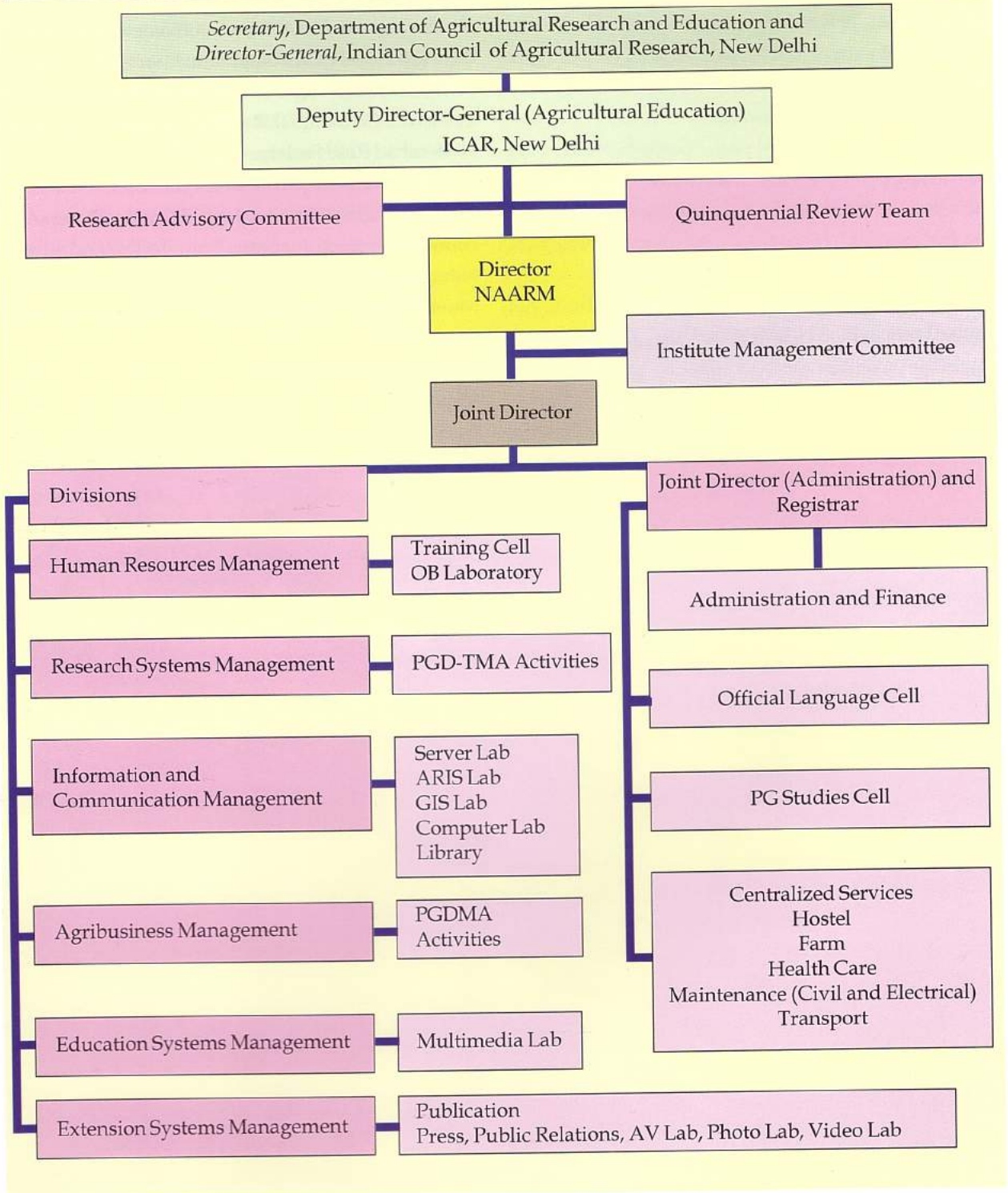
The logo for NAARM was unveiled on 1 Sep 2012 during the NAARM Foundation Day.

NAARM won nine first prizes and 10 second prizes in the XXXVI Annual Rose Show conducted by the Hyderabad Rose Society.

NAARM won prizes in individual events in the ICAR Inter-Zonal Sports Meet 2012 at the Indian Agricultural Research Institute, New Delhi, and in individual and team events in the ICAR South Zone Sports Meet 2013 at the Sugarcane Breeding Institute, Coimbatore.

Organogram of

National Academy of Agricultural Research Management
Indian Council of Agricultural Research
Hyderabad (Andhra Pradesh) 500 030



The NAARM: What is it and what it does?

THE 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 NAARM had also started post-graduate education programmes in agricultural management and technology management to address the emerging challenges of linking research with the market.

Vision

NAARM will be India's premier institute in agricultural research management that enables NARS to adapt to change through continuous innovation.

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.

Thrust Areas

- 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

Ravi Viswanathan

that develops research leaders, agribusiness and technology 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

NAARM organizes capacity building programmes (CBP) for research managers, scientists, teachers, technical, administrative and finance personnel of the NARS. NAARM 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.

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The NAARM Logo

THE logo of NAARM, Hyderabad was unveiled by Dr V.N. Rai, IPS, Director, Sardar Vallabhbhai Patel National Police Academy, Hyderabad during the Foundation Day celebrations at NAARM, Hyderabad on 1 Sep 2012. The logo comprises of four elements:

The Globe

NAARM is globally recognized as a premier academy in imparting education in agricultural management.

The Human

The mission of NAARM is to promote professionalism in the management of agricultural education. The bright spot, a human, represents the scientific community.

Agriculture

Represents the Mandate of NAARM that is research in agricultural innovation systems, policies and management, the colour and shape standing tall as the objective of NAARM is to develop agriculture through management.

NAARM in English and Hindi

NAARM Vision – "By the year 2025, the Academy will emerge as a premier institute of excellence in agricultural management, known and sought nationally and globally for its expertise in management of agricultural education, research, training, consultancy, public policy programmes and agri-business, and will contribute significantly to promote the sustainable growth and development of agriculture." The logo was designed by Shri Dasari Bhoomaiah, Technical Officer, Central Institute of Fisheries Education, ICAR, Mumbai and modified by Ravi Viswanathan, Editor-cum-Information Officer, NAARM, Hyderabad.

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 brain-

storming 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

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 (MANAGE), National Institute of Rural Development (NIRD) 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).

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Capacity Building

NAARM classifies its "Capacity Building Programmes (CPB)" under 'Foundation Courses,' 'Leadership Development Programmes,' 'Refresher Courses,' 'Management Development Programmes/ Faculty Development Programmes,' 'Workshops,' 'Sponsored Programmes,' and 'International Training Programmes.'

A total of 62 capacity building programmes for 1,730 participants were conducted by the National Academy of Agricultural Research Management during 2012-13.

Capacity building programmes conducted by NAARM during 2012–13.

Type of capacity building programme	Number of CBP	Number of participants
Foundation Course: FOCARS	2	157
EDP Leadership Development	2	25
MDP Leadership Development (Pre-RMP)	2	77
MDP Agricultural Research Management (HOD)	2	44
MDP/Faculty Development Programmes	10	212
Refresher Courses/Summer Schools	3	89
Workshops/Seminars	21	555
Off-campus Programmes	18	514
Orientation Programmes	2	57
Total	62	1,730

Foundation Course

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 scientists are posted to different ICAR institutes on successful completion. The core contents are 'Agricultural Policy Perspectives,' 'Intellectual Property Rights and Technology Management,'

ICAR-ARS probationers of FOCARS 96 get together for a photograph.

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'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 96, 2 Jul to 29 Sep 2012

The course was conducted for 33 ICAR-ARS probationers in 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 Chief Guest during the Valedictory function was Dr Bangali Baboo.

FOCARS 97, 1 Jan to 1 Apr 2013

One hundred and twentyfour ICAR-ARS probationers were trained the FOCARS spread over three phases: Phase 1 on 'Orientation and Capacity Building (51 days);' Phase 2 on 'Field Experience Training (FET; 25 days);' and Phase 3 on 'Multi-disciplinary Perspectives (15 days).' The FET was held in the Central Research Institute for Jute and Allied Fibres, Barrackpore, Punjab Agricultural University (PAU), Ludhiana, University of Agricultural Sciences, Dharwad, Birsa Agricultural University (BAU), Ranchi, KrishiVigyan Kendra (KVK), Salem, KVK, Erode, KVK, Jalna, KVK, Khammam, KVK, Indian Institute of Sugarcane Research (IISR), Lucknow, KVK, Mathura, KVK, Gangavati, KVK, Mandsaur, KVK, Rajendra Agricultural University (RAU), Patna, KVK, Anantapur, KVK, Solapur, KVK, Solapur, KVK, Chaudhary Charan Singh Agricultural University, Hisar, KVK-Kerala Agricultural University,

ICAR-ARS probationers of FOCARS 97 get together for a photograph.

M. Ravi

Dr Gurbachan Singh hands over the certificate of completion of FOCARS 97 to Smt Chetna Gangwar (left). Also seen is Dr S.L. Goswami (right).

Thrissur, KVK, Kalimpong, Central Plantation Crops Research Institute, Kasargod, Central Rice Research Institute, Cuttack and Central Tuber Crops Research Institute, Thiruvananthapuram. Dr Gurbachan Singh, Chairman, Agricultural Scientists Recruitment Board (ASRB), New Delhi addressed the trainees during the valedictory function.

Leadership Development Programmes

These programmes are designed for leadership development for transformation of the National Agricultural Research System to the National Agricultural Innovation System. These programmes comprise of the "Executive Development Programmes on Leadership Development," "Management Development Programmes on Leadership Development" and the "MDP in Agricultural Research."

Executive Development Programmes on Leadership Development

The participants comprise of newly-recruited Directors, Zonal Project Directors, Assistant Directors-General, Joint Directors of the Indian Council of Agricul-

M. Ravi

M. Ravi

The participants in the EDP on 'Leadership Development," held from 4 to 8 Jun 2012 get together for a photo. Front row, from left: R.V.S. Rao, S. Arulraj, P. Manikandan, R.N. Chatterjee, Bidyut C. Deka, S.L. Goswami, K.S. Varaprasad, M. Babu, N.H. Rao. Rear row, from left: S. Rajendra Prasad, S.A. Asokan, Ram Kumar Yadav, S.K. Chakrabarti and A.R. Sharma.

tural Research and other Institutions in NARS who are in the cadre of Research Management Position (RMP). The core contents are 'Leadership Challenges in NARS,' and 'Leadership Qualities and Core Competencies.'

4 to 8 Jun 2012: A total of 10 Directors, Project Directors, Joint Director of ICAR Institutes and Dean and Director of SAUs were exposed to the latest trends in 'Leadership Development.' They were from the Directorate of Seed Research, Mau, Directorate of Oil Palm Research, Pedavegi, Project Directorate on Poultry, Hyderabad, Directorate of Oilseeds Research, Hyderabad, ICAR Research Complex for NEH Region, Nagaland Centre, Jharnapani, Central Tuber Crops Research Institute, Thiruvananthapuram, Directorate of Weed Science Research, Jabalpur, Tamil Nadu Veterinary and Animal Sciences University, Chennai, Madras Veterinary College, Chennai and Chaudhary Charan Singh Haryana Agricultural University, Hisar. Lectures were given by Drs S.L. Goswami (Leadership Challenges in NARS), N.H. Rao (Leadership Competencies Framework), R.V.S. Rao (Status of Leadership Quality in NARS – Results of an Empirical Survey, and Leadership Profiling), M.R. Senapathy (Ethics in Research Management), Ramesh Chand (Policy and Priority Setting in Agricultural Research), V.S. Sudhakar (Leading People – Motivation, Mentoring and Emotional Intelligence), B.R. Virmani (Vision and Leadership Development for R&D), P. Manikandan (Leadership and Chance Management – Case Studies from NARS), K.V. Iyer (Promoting Technology Entrepreneurship), R. Chandramouli (Financial Management and Accountability in Public Institutions), Naveen Kalra (Research and Technology Transfer in Private Sector), Kiran K. Sharma (Agribusiness Incubators) and V.A. Parthasarathy (Institutional Management).

17 to 21 Dec 2012: Fifteen Directors of ICAR institutes were trained. They were the Directors of the CIFA, Bhubaneswar, NRC on Meat, Hyderabad, CIPHET, Ludhiana, Central Sheep and Wool Research Institute, Avikanagar, CAZRI, Jodhpur, Directorate of Onion and Garlic Research, Pune, NRC on Seed Spices, Ajmer, ICAR Research Complex for Goa, Old Goa, CSWCRTI, Dehradun, IGFRI, Jhansi, Directorate of Cashew Research, Puttur, NBAIM, Mau, NRC on Camel, Bikaner, Joint Director, CIFE, Mumbai, and Project Director, WTC, IARI, New Delhi. Special lectures were given by Shri V. S. Sudhakar (Leading People – Motivation, Mentoring and Emotional Intelligence), Dr Prabhati Pati

(Organizational Leadership), Shri Kanhaiya Chaudhary (Procurement Management in ICAR), Shri Rajiv Mangotra (Vigilance and RTI in ICAR), Dr A.K. Vasisht (Budget, Implementation, and Monitoring), Shri Devendra Kumar (Financial Management and Accountability), Shri P.M. Srivastava (Labour Relations and Management in Public Institutions), Dr Kiran K. Sharma (Agribusiness Incubators), Shri K. Vijayaraghavan (Public-Private Partnerships in Agricultural Research), Dr N.T. Yaduraju and Shri M. Madan (Knowledge Sharing and Innovation in NARS), Dr S.M. Virmani (Planning for Research Excellence—Syntheses of Experiences of NAIP/NF and other Projects), Dr H.S. Gupta (Research and Commercialization—the IARI Experience) and Shri Swamy Lal (Yoga).

Management Development Programmes on Leadership Development (Pre-RMP Cadre)

The participants comprised of Head of Divisions and other senior functionaries in the Indian Council of Agricultural Research and other Institutions in NARS who are in the pre-Research Management Position cadre. The core contents are 'Personal Effectiveness,' 'Leadership,' 'Leadership Effectiveness,' 'IP and Technology Management,' 'IT Management,' 'Research Management and Administrative and Vigilance Issues,' 'Leading Teams,' 'Leadership Challenges and Leadership Development.' Two MDPs were conducted.

9 to 20 Apr 2012: Nineteen participants were exposed to lectures from varied faculty for the core contents. The participants came from the National Dairy Research Institute, Karnal, Project Directorate for Farming Systems, Modipuram, Central Avian Research Institute, Izatnagar, Directorate of Mushroom Research, Solan, Directorate of Wheat Research, Karnal, CAZRI Regional Research Station, Jaisalmer, Directorate of Water Management, Bhubaneswar, National Bureau of Plant Genetic Resources, New Delhi, Sugarcane Breeding Institute, Coimbatore, National Institute of Animal Nutrition and Physiology, Bengaluru, Indian Veterinary Research Institute, Izatnagar, TANUVAS, Chennai, Indira Gandhi Krishi Vishwa Vidyalaya, Raipur, Central Soil and Water Conservation Research and Training Institute, Dehradun and Central Agricultural Research Institute, Port Blair. Dr S. Ayyappan, Secretary, DARE and Director-General, ICAR handed over the certificates of participation on 20 Apr 2012.

The participants in the EDP on 'Leadership Development," held from 17 to 21 Dec 2012 get together for a photo. Front row, from left: Drs P. Manikandan, M.M. Roy, A.K. Sharma, A.K. Pal, Jai Gopal, K. Vijayaraghavan, S.L. Goswami, Ravinder Kaur, S.M.K. Naqvi, P. Jayasankar and N.H. Rao. Rear row, from left: Drs Balraj Singh, Niteen V. Patil, U.S. Shivhare, N.P. Singh, P.L. Saroj, P.K. Ghosh, P.K. Mishra, V.V. Kulkarni and R.V.S. Rao.

M. Ravi

M. Ravi

The participants in the Management Development Programme on 'Leadership Development (Pre-RMP Cadre)' held from 9 to 20 Apr 2012 get together for a group photograph.

8 to 19 Oct 2012: Fiftyeight participants from the NDRI, Karnal, IARI, New Delhi, CARI, Port Blair, CSWCRTI, Udhagamandalam, ICAR, New Delhi, RRS, CSWCRTI, Agra, ICAR Research Complex for Eastern Region, Patna, NBAGR, Karnal, NRC for Citrus, Nagpur, PAU, Ludhiana, CIPHET, Ludhiana, CIAE, Bhopal, DMR, New Delhi, CITH, Srinagar, CARI, Izatnagar, NBAII, Bengaluru, DRWA, Bhubaneswar, IIVR, Varanasi, CHES, Chettalli, CPCRI, Kasargod, CICRRS, Sirsa, IISS, Bhopal, CMFRI, Kochi, DRR, Hyderabad, CSSRI, Karnal, CAZRI, Jodhpur, AICRP on Tropical Fruits, AAU, Jorhat, NRC on DNA Fingerprinting, New Delhi, IASRI, New Delhi, WTC, IARI, New Delhi, CHES, Bhubaneswar, CRIJAF, Kolkata, CIFRI Regional Centre, Allahabad, CISH, Lucknow, DWR, Bhubaneswar, DWSR, Jabalpur, NRC on Seed Spices, Ajmer, IINRG, Ranchi, CIRG, Makhdoom, ZPD, Zone VII, Jabalpur, DOPR, Pedavegi, and IIHR, Bengaluru were acquainted with principles and practices of general leadership development; peoples' management skills; to provide overview of research management and administrative and financial management; and issues of vigilance, labour laws, IPR and technology management.

Dr S. Ayyappan, Secretary, DARE and Director-General, ICAR (right), hands over the participation certificate to Dr Randhir Singh (left) who had attended the MDP on 'Leadership Development (Pre-RMP Cadre)' held from 9 to 20 Apr 2012 . Dr S.L. Goswami is in the centre.

M. Ravi

Management Development Programmes in Agricultural Research Management

This MDP is aimed at Head of Divisions of ICAR institutes, Project Coordinators of ICAR, and Head of Departments, Associate Director of Research, and Associate Deans of State Agricultural Universities. The Core Contents are 'Research Management,' 'Human Resource Management,' 'Administration and Financial Management,' and 'Legal and Vigilance Issues of People at Work.' Two MDPs were conducted.

M. Ravi

The participants in the Management Development Programme on 'Leadership Development (Pre-RMP Cadre)' held from 8 to 19 Oct 2012 get together for a group photograph.

3 to 7 Jul 2012: Twenty-three middle level managers participated. The training methodology had interactive lectures, group exercises, management games and application of HR tools and methodologies. The participants were from CARI, Izatnagar, Agriculture College, Mahanandi, SWRI, Avikanagar, CTRI, Rajahmundry, CMFRI, Kochi, Agriculture College, Hassan, NBFGR, Lucknow, CAZRI, Jodhpur, CARI, Port Blair, PGRIAS, Kattupakkam, Madras Veterinary College, Chennai, PAU, Ludhiana, NIASM, Baramati, IASRI, New Delhi, GBPUAT, Pantnagar, CARI-RRS, Bhubaneswar, DRYSR Horticultural University, Tadepalligudem, ZPD-Zone-VII, Jabalpur, ANGRAU, Hyderabad, AP Rice Research Institute and RARS, Maruteru, and BCKVV, Kalyani.

M. Ravi

After the inaugural session, participants in the MDP on 'Agricultural Research Management,' held from 3 to 7 Jul 2012 get together for a group photograph.

3 to 7 Dec 2012: Twentyone newly recruited Head of Divisions of ICAR Institutes, Project Coordinators of ICAR, Head of Departments, Associate Directors of Research and Associate Deans of SAUs and other senior officers of equivalent cadre in NARS were trained from 3 to 7 Dec 2012. The lectures were" "IPR Case Laws and Technology Management in ICAR" (R. Kalpana Sastry), "AHP for Prioritizing Research Projects – Theory and Group Exercise" (S.K. Soam), "Management of People at Work" (M.M. Anwer), "Leadership" and "Competitive Grants in Research" (B.R. Virmani, CoRD-M), "Communication for Research Managers" (Lekha),

Seen in the photograph are participants of the MDP on 'Agricultural Research Management,' held from 3 to 7 Dec 2012.

M. Ravi

"Nurturing Innovations"(Brig. Ganesham), "Challenges in Managing Research" (S.L. Goswami), "Conflict Management" (P. Manikandan), "Technology Management" (Kavita), "Administrative and Vigilance Issues"(M. Suresh Kumar), "Public-Private Partnership in Research" (N.H. Rao), "Financial Management" (Devendra Kumar) and "Donors Perspective of Research Projects" (D. Rama Rao). The participants came from the NRC for Orchids, Pakyong, NRC for Citrus, Nagpur, Central Tobacco Research Institute, Rajahmundry, Indian Institute of Pulses Research, Kanpur, Directorate of Rice Research, Hyderabad, Indian Institute of Horticultural Research, Bengaluru, IVRI, Izatnagar, VPKAS, Almora, CIFE, Mumbai, Directorate of Maize Research, New Delhi, G.B. Pant University of Agriculture and Technology, Pantnagar, Gandhigram Rural University, Gandhigram and MANAGE, Hyderabad.

M. Ravi

Dr S.L. Goswami (left) hands over the participation certificate for the Refresher Course on 'Agricultural Research Management' held from 5 to 18 Jun 2012 to Dr Arup K. Mukherjee.

Refresher Course

These courses are organized to update the knowledge and skills of intended participants in the areas of topical interest. The participants are recruited Senior Scientists and Principal Scientists through lateral entry from the University and other than the Agricultural Research Service of the ICAR. The core contents are 'National and International Agricultural Research Systems,' 'Orientation to ICAR System,' 'Research Project Formulation,' 'Monitoring and Evaluation,' 'IPR Issues,' 'Human Resource Management,' 'Team Work for Interdisciplinary Research in Agriculture,' 'Information and Communication Management,' 'Administration and Finance Management.' Two Refresher Courses were held.

5 to 18 Jun 2012: Thirtyseven participants participated during this Refresher Course. They were from the CIRB, Nabha, NBSSLUP, Nagpur, DOR,

Participants of the Refresher Course on 'Agricultural Research Management' held from 5 to 18 Jun 2012 get together for a photograph.

M. Ravi

M. Ravi

Seen in the photograph are participants of
the Refresher Course on 'Agricultural Research Management' held from 7 to 19 Jan 2013.

Hyderabad, NRCSS, Ajmer, IARI, New Delhi, NBPGR, New Delhi, CAZRI, Jodhpur, DWR, Karnal, CSSRI, Karnal, Central Horticultural Experiment Station, Bhubaneswar, Directorate of Oil Palm Research, Pedavegi, Central Institute of Brackishwater Aquaculture, Chennai, CAZRI Regional Research Station, Jaisalmer, Directorate of Groundnut Research, Junagadh, Indian Institute of Vegetable Research, Varanasi, IVRI, Izatnagar, IGFRI, Jhansi, National Institute of Abiotic Stress Management, Pune, Directorate of Sorghum Research, Hyderabad, Project Directorate for Farming Systems Research, Modipuram, Central Institute of Fisheries Technology, Kochi, Central Institute for Cotton Research, Nagpur, CIRG, Makhdoom, and Directorate of Soybean Research, Indore. In addition to the regular topics, special lectures were given on 'GFR Rules and Purchase Procedures and Building Core Competency,' 'Winning Research Proposal Writing,' 'Platinum Rule for Interpersonal Relationship,' and 'Emotional Intelligence and Personal Planning.'

7 to 19 Jan 2013: To build the research perspectives of directly recruited Senior Scientists and Principal Scientists and to acquaint them with appropriate research management techniques and methodologies were the objectives of the 4th refresher course for 31 participants. The topics covered were 'Achieving Excellence in Agricultural Research,' 'Emerging Challenges in Agricultural Research,' 'NARS in India,' 'Winning Research Proposal Writing,' 'Project Prioritization Techniques – An Overview,' 'Project Management,' 'Monitoring of Agricultural Research – RFD,' 'HYPM, PIMS, RPFs, Writing Project Report,' 'Research Impact Assessment,' 'Technology Forecasting,' 'IP Management and Technology Commercialization,' 'GI and Biodiversity Management,' 'Personality Profiling,' 'Emotional Intelligence and Personal Planning,' 'Yoga,' 'Motivation,' 'Teamwork,' 'Group Dynamics and Team Building,' 'Gender Issues in Agriculture,' 'Orientation to SAS, GIS and RS,' 'Bio-informatics,' 'Overview of PRA, Internet and Open Source use in Agricultural Research,' 'Communicating Science through Mainstream Media,' and 'GFR and Purchase Procedures and Time Management.' The participants came from the IARI Regional Station, Wellington, Directorate of Groundnut Research (DGR), Junagadh, National Research Centre for Plant Biotechnology (NRCPB), New Delhi, Indian Institute of Pulses Research (IIPR), Kanpur, Vivekanand Parvatiya Krishi Anusandhan Shala (VPKAS), Almora, Indian Veterinary Research Institute (IVRI), Izatnagar, National Research Centre (NRC) on Yak, West Kameng, NRC Agroforestry, Jhansi, Central Institute of Post-harvest Engineering and Technology (CIPHET), Ludhiana, Indian Grasslands and Indian Grassland and Fodder Research Institute (IGFRI), Jhansi, National Institute of

Abiotic Stress Management (NIASM), Baramati, Directorate of Medicinal and Aromatic Plants Research, Boriavi, ICAR RC NEHR, Sikkim Centre, Gangtok, Indian Agricultural Research Institute (IARI), New Delhi, National Diary Research Institute (NDRI), Karnal, Central Research Institute for Dryland Agriculture (CRIDA), Hyderabad, CSSRI-RRS, Lucknow and NAARM, Hyderabad.

Management Development Programmes/ Faculty Development Programmes

Training on Consultancy Projects Management

A first of its kind, the programme on "Consultancy Projects Management" was held at NAARM, Hyderabad from 7 to 14 Aug 2012. The objectives were to build the capacity of NARS scientists on handling, monitoring and evaluating consultancy projects, experiences in consultancy from across the sectors/industry, art, ethics and quality concerns in consultancies and tips on scientific writing for consultancies. There were 16 scientists who participated in the training. They were from MPUAT, Udaipur, Madras Veterinary College, Chennai, IISC, Bhopal, JNKVV, Jabalpur, CPCRI, Kasargod, CIPHET, Ludhiana, CAZRI, Jodhpur, DCR, Puttur, DWSR, Jabalpur, NIAM, Baramati, KVK, Poonch, KVK, Kathua, KVK, Rajouri, DOPR, Pedavegi and Dr YSR Horticultural University, Tadepalligudem.

e-Learning Content Development and Management

A special training programme on "e-Learning Content Development and Management" was organized at NAARM, Hyderabad from 16 to 21 Aug 2012 for a total of 30 faculty members of agricultural engineering from the Anand Agricultural University (AAU), Anand, Tamilnadu Agricultural University, Coimbatore and Punjab Agricultural University (PAU), Ludhiana. The participants were imparted knowledge and skills pertaining to multimedia, story board, standards for content creation, animations, special effects, navigation and learning objects using Adobe® Flash, audio, photo and video editing, content capturing tools and techniques, e-learning and content management using MOODLE.

Multimedia Digital Content Development

A 10-days course on "Multimedia Digital Content Development" for 11 participants was conducted from 22 to 31 Aug 2012. The core contents were digital content creation for cross platform web-based e-learning and technology transfer; multimedia tools and protocols; and audio and video production editing and integration. Participants came from the ATMA, Gov-

Seen in the photograph are participants of the MDP on 'Consultancy Projects Management' at NAARM, Hyderabad from 7 to 14 Aug 2012.

M. Ravi


M. Ravi

A MDP on 'Multimedia Digital Content Development' was conducted at NAARM from 22 to 31 Aug 2012. Seen in the photograph are participants of this MDP.

ernment Seeds Store, Agra, College of Sericulture, Bengaluru, IISR, Lucknow, Dr Y. S. Parmar University of Horticulture and Forestry, Solan, CPCRI, Kasargod, Directorate of Mushroom Research, Solan, IARI, New Delhi, IVRI, Izatnagar, College of Fishery Science, Nellore, College of Fisheries, Mangalore, and Sri Venkateshwara Veterinary University, Hyderabad.

Innovative Approaches to e-learning

Associate Professors and Assistant Professors were trained in e-learning concepts, environment and system, introduction to web technologies, database concepts for e-learning, content management standards, learning objects, concepts of content management using open source software, web-based content sharing methodologies, learning management systems, online evaluation through hands-on practical in the ICAR-sponsored course on "Innovative Approaches to e-learning" from 11 to 20 Sep 2012. The participants came from the Agricultural College, Bijapur, College of Forestry, Sirsi, Agricultural Engineering College and Research Institute, Kumulur, College of Food and Dairy Technology, Chennai, KVK, Purulia, ANGRAU, Hyderabad, LLR University of Veterinary and Animal Sciences, Hisar, College of Fisheries, Tripura, College of Agriculture, Raichur, KAU, Thrissur, College of Agriculture, Dharwad, CSKHPKV, Palampur, Allahabad Agricultural Institute, Allahabad, Horticultural Research Station, Pandirimamidi, Madras Veterinary College, Assam Agricultural University, Guwahati, College of Fishery Science, Muthukur, RARS, Bijapur, College of Fisheries, Mangalore, Dr PDKV, Akola, BAU, Ranchi, Department of Dairy Technology Programme, Kamareddy, College of Home Science, Hyderabad and College of Agricultural Engineering, Sangareddy.

Seen in the photograph are participants of the MDP on 'Intellectual Property Rights and Biotechnology' held from 21 to 25 Sep 2012.


M. Ravi

Intellectual Property Rights and Biotechnology

Twentynine participants were trained from 21 to 25 Sep 2012 in knowledge pertaining to intellectual property rights and biotechnology, GI and agro-biodiversity, international agreements and other conventions in IP regime, biotech patents, licensing agreements, institutionalization of IP policy in biotechnology, technology forecasting, patent protection and project management, patent search, translational research and commercialization, landscape studies, patent validity, promoting access to IP and moving technologies forward and initiatives for strategic IPR management in ICAR. The participants were scientists from CARI, Port Blair, IISP, Kozhikode, CMFRI, Kochi, DOGR, Pune, NRC for Banana, Tiruchirapalli, IISR, Lucknow, IIHR, Bengaluru, CSWRI, Tonk, IISS, Bhopal, IVRI, Bengaluru, ICAR Research Complex for Eastern Region-RRC, Ranchi, ICAR, New Delhi, Dr PDAU, Akola, UAS, Bengaluru, Kerala University, Thiruvananthapuram, UAS, Raichur, Dr PDKV Campus, Akola, TANUVAS, Chennai, Marathwada Krishi Vidhyapeeth, Parbhani, Dairy Technology Programme, Kamareddy, CARI, Izatnagar, Yeshwant Mahavidyalaya, Nanded, NRC on Meat, Hyderabad, SVVU, Hyderabad, ANGRAU, Hyderabad and NIRD, Hyderabad.

ICT for Agricultural Knowledge Management

The NAIP funded training Programme on "Information and Communication Technologies for Agricultural Knowledge Management" was held at NAARM from 3 to 17 Oct 2012. Seventeen participants that included Professors, Associate Professors, Senior Scientists and Technical Officers participated. The objective was to sensitize the participants on the ICT models in agriculture using traditional and modern ICT tools for information sharing and agribusiness; to orient them in the latest content management practices; technologies in database management and to enhance their skills in using these tools; participatory geographic information systems (PGIS) for decision support; and e-learning modules and to facilitate them in generation of web-based and multimedia-based information modules. The participants were from the Kerala Agricultural University, Vellayani, Kerala Veterinary and Animal Sciences University, Thrissur, Kerala University of Fisheries and Ocean studies, Kochi, Navsari Agricultural University, Navsari, Directorate of Oilseeds Research, Hyderabad, Dr B.R. Ambedkar University, Agra, Central Arid Zone Research Institute, Jodhpur, College of Agriculture, Indore, Rajendra Agricultural University, Pusa, Samastipur, University of Agricultural Sciences, Shimoga, College of Veterinary Science, Proddatur, Directorate of Cashew Research, Puttur, Central Institute for Research on Goats, Makhdoom, Indian Institute of Vegetable Research, Varanasi and the Central Potato Research Institute, Modipuram.

Dr R.K. Tyagi (left) receives his certificate for participation in the MDP on 'Information and Communication Technologies for Agricultural Knowledge Management' from 3 to 17 Oct 2012 from Dr S.L. Goswami.

M. Ravi

Communicating Science through Mainstream Media

This training programme was organized for 25 personnel from the SAUs and ICAR from 4 to 11 Dec 2012. The objectives were: to sensitize the entry and middle level NARS professionals about the emerging role of mainstream media in technology dissemination; to impart insights into emerging formats of mainstream media and to develop the skills in writing and presenting for mainstream media. The lectures were: "Communicating Science through Mainstream Media – An Overview (R. Ventattakumar, NAARM), "Principles of Writing and Producing Video" (V.K.J. Rao), "Communicating through Community Radio" (P.V. Satheesh, Deccan Development Society, Hyderabad), "Principles of Writing for Newspapers, and Hands-on Practice on Writing News and Feature Stories" (M.J. Prabhu, *The Hindu*,

Chennai), "Writing for Radio – Principles" (P.S. Gopalakrishna, Former Station Director, All India Radio, Hyderabad), "Participatory Journalism (Varghese C. Thomas, Chief Sub-Editor, *Malayala Manorama*), "Presentation Skills – Principles and Hands-on Practice" (B.S. Sontakki, NAARM), "Script Writing for Video and Television" (Thirugnanam, Punnagai Media Academy, Chennai), "NGO Experience on Communicating through Mainstream Media" (G.V. Ramanjaneyulu, Centre for Sustainable Agriculture, Hyderabad) and "Principles of Writing for Farm Magazines" (Ravi Viswanathan, NAARM). The participants were given hand-on training in video production in the video laboratory at NAARM.

M. Ravi

Participants in the programme on 'Communicating Science through Mainstream Media' held from 4 to 11 Dec 2012 get together for a group photograph.

Advances in Agribusiness Management

Fourteen participants were trained from 18 to 24 Jan 2013. The programme spread over 17 sessions included topics such as 'FDI in Retail and its Implications on Indian Food Sector,' 'Application of GIS in ABM,' 'Information Systems and Agribusiness,' 'Role of Private Sector in Dairy Development in India: Opportunities and Challenges,' 'Supply-chain Game,' 'PPP in Agri-Business,' 'Advertisement and Brand Management,' 'Advances in Marketing of Agricultural Commodities: Key Lessons Learnt,' 'Supply Chain Management in Seed,' 'Marketing of Agri-inputs,' 'Genetically Modified Crops – Future of Indian Agriculture,' 'Project Management,' 'Major Issues in Entrepreneurship in Agribusiness in India,' 'Advances in Quantitative Techniques' and 'Risk Management in Agri-business.' The participants came from the Directorate of Marketing and Inspection, Hyderabad, Acharya N.G. Ranga Agricultural University (ANGRAU), Hyderabad, Sardar Vallabhbhai Patel University of Agriculture and Technology (SVPUAT), Meerut, Central Agricultural University (CAU), Umiam, College of Agriculture Business Management, Narayangaon, Banaras Hindu University (BHU), Varanasi, Chandra Shekhar Azad University of Agriculture and Technology (CSAUAT), Kanpur, Sher-e-Kashmir University of Agricultural Sciences and Technology (SKUAST), Srinagar, Chandra Sekhar Azad University of Agriculture and Technology (CSAUAT), Kanpur, Indian Institute of Sugarcane Research (IISR), Lucknow, Kerala Agricultural

M. Ravi

M. Ravi

Top: Participants in the programme on 'Advances in Agribusiness Management' held from 18 to 24 Jan 2013 get together for a group photograph. Below: Dr B. Dhanapal (right) conducts a practical class on "Supply-chain Game."

University (KAU), Pattambi, Amity University, Lucknow and University of Agricultural Sciences (UAS), Raichur.

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 are a useful resource material for NAARM programmes.

Training Needs Assessment of Faculty and Scientists of Agricultural Universities System for Academic Excellence

The objective was to assess the felt training needs of faculty and scientists of agricultural universities in four domain areas of teaching, research, extension, and administrative/management and others. Fiftysix Assistant Professors and Associate Professors participated in the Workshop held from 8 to 9 Jun 2012.

The major recommendations from the deliberations were:

- To improve quality and effectiveness of SAUs, the system structure and procedures need to change.
- Each university may need in excess of Rs 25 lakhs/year to meet their faculty training needs.
- There should be a HRD and Training unit at each SAU to periodically identify faculty training needs, arrange for training, follow up and assess impact of training.
- Efforts should be made by all the SAUs to develop a faculty development plan.
- Regional Centres for faculty development should be encouraged rather than having one at each SAU.
- Structured compulsory training to faculty of SAUs at the entry level is essential and this should be done at NAARM on the lines of FOCARS.
- Regular refresher courses, management development and executive development programmes should be designed and offered by NAARM to cater to the middle and higher cadres of faculty and university officials.
- NAARM should follow 'training of trainers' approach to create a critical mass of master trainers who in turn can take the responsibility of faculty training in their respective institutions.
- State-of-the-art infrastructure such as modern smart classrooms, laboratory and library facilities should be established to harness the full benefit of capacity building of faculty.
- Alternate modes of training through distance and electronic modes need to be encouraged.

Participants deliberated on the training needs of faculty and scientists of agricultural universities in the Workshop on 'Training Needs Assessment of Faculty and Scientists of Agricultural Universities System for Academic Excellence,' held at NAARM from 8 to 9 Jun 2012.

M. Ravi

24th Developing Winning Research Proposals (3rd NSBSFARA Sponsored Workshop)

The Workshop was held from 12 to 13 Jun 2013 in which five PI and Co-PI of short-listed projects under the basic fund scheme of the ICAR participated. They were from the PAU, Ludhiana, IIPR, Kanpur, IARI, New Delhi, and CAZRI, Jodhpur. The objectives were:

- To develop the skills for writing research proposals that can win funds from donors focusing on the needs of the stakeholders.
- To give practice in writing various components of a research proposal.
- To explain the use of log frame in research programme planning.
- To develop a good project design and estimate that is rationally accepted.

Institutional Innovations in Agri-Extension for Inclusive Growth

Twentythree participants were trained from 1 to 7 Aug 2012. The objective of this training workshop was to sensitize the participants in emerging institutional innovations in agricultural extension and potential impact as well as to recommend strategies for institutionalizing and up-scaling such institutional innovations. The workshop was structured around institutional innovations in public-private partnership, contract and corporate farming initiatives, entrepreneurship promotion models such as producer companies, Agriclinics and Agribusiness Centres (ACABCs), extension through input dealers, institutional innovations in less-favoured areas, Agricultural Technology Management Agency (ATMA), new-generation KVKs, and institutional innovations for agricultural knowledge management. The participants came from the NRC Agroforestry, Jhansi, CSWCRTI, Dehradun, KVK, Alleppey, IARI, New Delhi, KAU, Thrissur, KVK, Hulkoti, KVK, Howrah, KVK, Khowai, Tripura, KVK, Gamharia, DRR, Hyderabad, DGR, Junagadh, KVK, Rewari, CARI, Bareilly, NRC for Citrus, Nagpur, DOGR, Pune, NBFGR, Lucknow, SRS-NDRI, Bengaluru, CAZRI, Kukma Bhuj, ZPD, Zone-I, Ludhiana, KVK, Dindigul, CARI, Port Blair and KVK, Ambala.

Policy Workshop on Training Transfer and Impact of CAFT at NARS

A policy workshop on "Training Transfer and Impact of Centre for Advanced Faculty Training at NARS" was held from 10 to 11 Sep 2012. The objective was to peer validate the results of the study on "Effectiveness and Impact of CAFT Programmes at NARS" sponsored by Division of Education, ICAR, New Delhi. Dr Kusumakar Sharma, Assistant Director-General (HRD), ICAR, New Delhi participated in the deliberations. Based on the deliberations, strategies for effective planning and implementation of CAFT programmes from the XII Plan were formulated. The participants came from KVAFSU, Bidar, ANGRAU, Hyderabad, CAU, Pasighat, SKUAST, Jammu, National Institute of Animal Nutrition and Physiology, Bengaluru, College of Horticulture, Kollar, Rubber Research Institute of India, Kottayam, TNAU, Coimbatore, College of Veterinary Science, Karimnagar, SVBP University of Agriculture and Technology, Meerut, PAU, Ludhiana, Kerala Veterinary and Animal Sciences University, Mannuthy, Thrissur, DSR, Hyderabad, AICRP on Home Science, Hyderabad, Muthayammal College of Arts and Science, Rasipuram, West Bengal University of Animal and Fishery Science, Kolkata, Annamalai University, Annamalainagar, GADVASU, Ludhiana, CIAE, Coimbatore, CAFT, Hyderabad, and NAARM, Hyderabad.

Prioritization, Monitoring and Evaluation

This workshop was organized from 11 to 17 Sep 2012 in which 22 delegates participated. They were exposed to an overview of PME and techniques in agricultural research and development, macro-level and micro-level priority setting, environmental and socio-economic aspects of M&E, issues in PME of resource management and policy research, and emerging issues of PME on targeted resources and groups. The objective was to build the capacity of scientists in NARS in PME with specific reference to implementation of NAIP projects. The participants came from the CIFRI, Barrackpore, NRC for Agroforestry, Jhansi, NRC for Litchi, Muzaffarpur, University of Horticultural Sciences, Bagalkot, Junagadh Agricultural University,

Junagadh, DRR, Hyderabad, DRWA, Bhubaneswar, DOGR, Pune, CIBA, Chennai, CAZRI, Jodhpur, DWR, Karnal, KAU, Kasargod, ACRI, Madurai, Directorate of Floricultural Research, New Delhi, IISS, Bhopal, UAS, Bengaluru, CSSRI, Karnal, DMR, Solan and DOR, Hyderabad.

Scientific Report Writing and Presentation for Capacity Building

A total of 97 participants were trained in four training workshops under the sponsorship of the National Agricultural Innovation Project (NAIP). The participants included Scientists, Professors, Associate Professors, Assistant Professors and Senior Technical Officers of NARS (ICAR, SAUs, Private and Others). The objectives were:

- To develop the skills for writing winning research reports that can meet donors requirements and also the needs of the stakeholders.
- To sensitize on effective communication of research results.
- To give practice in writing various types of research reports and their communication through a variety of media.

The Workshops were conducted from 5 to 8 Jun 2012, 25 to 28 Sep 2012, 20 to 23 Nov 2012 and 4 to 7 Mar 2013.

Presentation skills on writing scientific reports, social marketing of agricultural innovations, document design, document designing, report writing requirements under NAIP, writing research papers, presentation of research (video recording and review) and writing executive summary were imparted.

M. Ravi

Seen in the photograph above are participants who attended the training workshop on 'Scientific Report Writing and Presentation for Capacity Building' from 5 to 8 Jun 2012. Below: Participants who attended the workshop from 25 to 28 Sep 2012 get together for a group photograph.

M. Ravi

NFBSFARA Workshop on Developing Winning Research Proposals

The NFBSFARA, ICAR sponsored workshop was held as two workshops from 19 to 21 Nov and 22 to 24 Nov 2012. There were 36 participants in the first one and 34 in the second. The objectives were: To develop the skills for writing research proposals that can win funds from donors focusing on the needs of the stakeholders; To give practice in writing various components of a research proposal; To explain the use of log frame in research programme planning; and to develop a good project design and estimate that is rationally accepted. The workshop comprised of lectures on "Overview to Writing Research Proposal" (D. Rama Rao), "What is a Winning Type Research Proposal? and "Developing a Good Proposal – Case Study" (S.M. Virmani), "Results Framework" (D. Rama Rao), "Shaping the Projects" (A. Bandyopadhyay) and "Log Frame Technique and Exercise" (S.K. Soam). The participants came from the Central Institute for Research on Goats, Makhdoom, NDRI, Karnal, Central Institute of Freshwater Aquaculture, ISI, Kolkata, Indhrapur University, Kolkata, IARI, New Delhi, NIANP, Bharathidasan University, Trichy, IVRI, Bengalure, IVRI, Hebbal, IVRI, Izatnagar, IVRI, Mukteswar, Central Sheep and

Wool Research Institute, Avikanagar, Indian Institute of Technology, Delhi, BITS, Pilani-KK Birla Goa Campus, IARI, New Delhi, University of Delhi, Delhi, TNAU, Coimbatore, Bidhan Chandra Krishi Viswavidyalaya, Mohanpur, Directorate of Groundnut Research, Central Arid Zone Research Institute, Regional Research Station, Bhuj, Kutch, Central Institute for Research on Cotton Technology, Mumbai, National Institute of Research on Jute and Allied Fibre Technology, Indian Institute of Science Education and Research Kolkata, CRRI, Cuttack, National Botanical Research Institute, Lucknow, National Research Centre on Plant Biotechnology, New Delhi, Anna University Constituent College Dindigul, Directorate of Rice Research, Hyderabad, CIAE, Bhopal, IASRI, New Delhi, MPKV, Rahuri, PDADMAS, Bangalore, Zonal Project Directorate, Zone VIII, Bangalore, NBSSLUP, Bangalore, CIFE, Mumbai, Madras Veterinary College, Chennai, MANAGE, Hyderabad and OUAT, Bhubaneswar.

Educational Policy and Planning for Promoting Innovation in Agriculture

The Workshop was held from 16 to 19 Jan 2013. The objectives were:

- To acquaint participants with principles and practices of research management.
- To build capacities in educational policy and planning.
- To evolve strategies to learn and improve quality in teaching.

There were 30 participants that included Senior Professors, Heads of Departments, Associate Deans, and University Officers from Agricultural Universities and ICAR deemed-to-be Universities.

Six technical sessions were held on 'Academic Management,' 'Governance and Finance,' 'Academic Quality and Technology Use,' 'Education in Private Sector,' 'Internship and Entrepreneurship,' and 'Capacity Development.' The recommendations were:

Academic Management

- Instituting training programmes on leadership development and fund-raising for faculty administrators.
- Addressing training and information needs of faculty administrators through one-on-one meetings or small group formats.
- Scientists with teaching bent of mind charged with ethical values and integrity to be preferred for teaching job.
- Examination and evaluation of the students should be such it would test the total understanding and comprehension of the subject.
- Different colleges can share resources to make education more effective and also expose students to different learning environments such as linkage between different fisheries colleges can help colleges to share certain facilities.
- Budgetary and financial restrictions to be removed to improve support to agricultural education.
- Providing and improving incentives for faculty administrators such as Deans and Directors (as provided by UGC to principals or equivalent cadres).

Governance and Finance

- ICAR may assume larger responsibility as a regulatory authority to regulate agricultural education in the country with statutory powers.
- The ICAR model may be made more open and supplemented with following regulations/rules to promote quality of agricultural education.
- Minimum standards of agricultural education (curriculum, human resources, Infrastructure facilities)
- Regulations for affiliation, approval and accreditation of Government and private institutions imparting agricultural education.
- Regulations for professional issues – Ethics, code of conduct.
- Regulation for creation of new Universities (SAU) and their autonomy.
- Programmes for entrepreneurial development and self-employability.
- Critical assessment of quality of institutes and stringent accreditation process.
- Systematic manpower need assessment, faculty up-gradation and competence development.
- Inter-institutional linkages (networking) for strengthening agricultural education.

Academic Quality and Technology Use

There is an increasing demand to include new courses at the degree level curriculum particularly related to basic sciences and emerging areas such as environment, information technology and management due to competitive globalization of agriculture. Quality improvements in education require huge investments both in infrastructure and human resource development.

To meet both the quality and coverage in education, there is an urgent need for the adoption of ICT technologies, improvement in pedagogy and investment in the research in educational processes.

Teaching and mentoring should go together to encourage academically vulnerable group of students (students of different academic backgrounds, medium of instruction, states and socio-economic backgrounds).

Multi-cultural (pan India) education will enhance understanding of various cultures, so that students recognize and respect diversity of cultures and adapt to participatory community life in the university, and are employable in any part of the country/abroad.

Need to establish few central colleges for undergraduate stream with admissions through All India competition and better incentives. Some of the existing colleges in SAUs can be elevated as autonomous colleges with central support (by ICAR) in the pattern of NITs or IITs under MHRD.

Orientation programme on teaching, research and extension may be introduced for newly recruited faculty. Those teachers who have completed five years of services may be selected to go abroad to western universities. They should enroll for minimum of two academic semesters (one year) in their area of specialization and should obtain at least B grade. It should be ensured that the selected teachers have passed with good standing TOFEL and other tests acceptable to the universities where they are going to be located. All costs should be met by a special fund by ICAR.

Curriculum in the agricultural and allied courses may be modified to meet the demands of the industry and other employers. For instance, engineering education may be modified to suit the demands of farm machinery industry, IT sector and recruitment line departments like the departments of soil conservation, minor irrigation and agricultural engineering.

Good practices in higher education require incorporation of appropriate educational technologies. Moderate integration of ICT tools in curriculum is the key for ensuring quality education. Modern educational technologies using ICTs such as learning management systems (LMS) and open course ware (OCW) should be put-in place to accelerate learning in an effective pedagogical framework.

To improve quality and efficiency of education, adequate training of teachers to up-grade their knowledge, skills and attitude is required at periodic intervals.

The demand for food, quality of horticultural products, vegetables, poultry products and others is going to increase in the years to come, due to increases in population and the purchasing capacity of the people. Adoption of innovative production systems by the farmers would be the key to future success of agriculture/animal husbandry/fisheries in our country. The upgradation of faculty and in turn students is a great challenge for the agricultural education institutions in the coming years.

Education in Private Sector

Considering the requirements/demands of various stakeholders, education in agriculture and allied sciences by private sector needs to be permitted in the country provided the requirements of registration, infrastructural facilities, manpower and technical expertise, quality education, accreditation are necessarily met out by the institutions concerned.

ICAR/SAUs can recognize entrepreneurship education programmes offered by registered private institutions/schools related to agriculture and allied activities to cater to the needs of large number of students completing 10+2 education.

ICAR and/or government approved/recognized accreditation boards shall take up the responsibility of monitoring the quality of agricultural education offered by the private universities/institutions.

Internship and Entrepreneurship

RAWE programme should be planned and conducted more intensively in all agriculture related streams, preferably during seventh semester on a multidisciplinary mode, with at least 12-15 weeks stay in villages with farmers.

Experiential Learning (EL) programme is essential for improving the opportunities for employability or for self-employment of the graduates. Proper guidelines need to be in place for effective and uniform implementation of the same by the SAUs. ICAR may take initiative to develop and enforce the same.

Adequate financial support has to be extended by the ICAR to the SAUs for developing appropriate infrastructure and developing expertise of teachers for effective conduct of EL programme.

Newly established Experiential Learning Units may not generate adequate income in the initial phase of establishment (3-5 years). All students are not getting scope and opportunity to take up income earning exercises. This approach is distorting the EL implementation. Confidence development and capacity building among students should be the main objective of the EL programme rather than insisting upon income generation and profit sharing as the main motive.

There is a need for inculcating entrepreneurial culture to bring in paradigm shift and the mindset of future generation by introducing relevant education at primary, secondary and higher levels.

Reorientation of curriculum and course content is imminent. There is a need to create "think tank of national/regional experts" for developing entrepreneurship based education, having active collaboration with industries, corporate sectors, and line departments.

Entrepreneurship must be extended up to grass root level (farmers, agro-industry) to facilitate livelihood generation and also in converting unorganized agricultural sector into an organized one.

ICAR institutes must have regular/fixed slot for accommodating UG/PG students of SAUs for their internship/attachment/training without charges/fees.

The curricula should be tailor made to address needs/conditions of specific regions under SAUs.

Capacity Development

Need of professional competence, development of teachers on knowledge update, teaching techniques and teaching methods and leadership development should be the regular activity. Provision of necessary support with adequate fund by the state and the central Governments is recommended.

Formulation of a common HRD policy for competence development of teachers is needed. A plan of action is to be evolved to cover all the teachers under the capacity development programme in a specific time frame. In order to plan, monitor and streamline the professional competence development activities (HRD activities), creation of HRD Cell, headed by university officer is recommended.

Foundation course for a minimum period of three months for newly appointed Assistant Professors is recommended. This is to orient the new entrants about the organization, its mandates, goals and activities, acts, statutes and regulations, teaching, research and extension. Training of teachers on soft skill development is necessary which could also very well be a part of foundation course.

Provision should be made for sabbatical leave for teachers for about two years aimed at exposing them to gain knowledge and expertise from best of the bests institutes of the world in specific areas of interest so that the same expertise could be used at the home institute after return.

A national institute should be established for training of teachers of agricultural universities. Such an institute can have satellite centres in the form of outreach arms in different regions of the country.

GIS Applications in Natural Resources Management

Under the Learning and Capacity Building (L&CB) component of the National Agricultural Innovation Project (NAIP), a national workshop was conducted from 20 to 23 Feb 2013. There were 55 participants. They were Head of Divisions, ICAR National Fellows, Principal Scientists from the ICAR, Professors from State Agricultural Universities, Scientists from the ICRISAT, Indian Institute of Technology Bombay, National Re-

mote Sensing Centre, National Geophysical Research Institute, JNTU-Hyderabad, NGOs such as PRADAN and private reputed companies such as Intergraph and Amigo, which are involved in the GIS and GPS technologies development.

The objective of the workshop was to build up a network of GIS community from the already developed critical mass through GIS capacity building programmes of NAARM and other centres of excellence. The major recommendations were:

- Develop appropriate research policy and project funding strategies to create networks and sustain the Community of Practice among GIS practitioners.
- Facilitating collaborative data development, enrichment and sharing to integrate the GIS in various core agricultural research areas.
- Encouraging integration of socioeconomic considerations in GIS and GPS based research projects.

Sponsored Programmes

These are customized off-campus programmes conducted on demand by NAARM away from its campus in Hyderabad.

Developing Winning Research Proposals at GADVASU, Ludhiana

A total of 115 participants, comprising of eight research scholars, three research associates and the rest being faculty and scientists of GADVASU were trained at Ludhiana from 11 to 12 Apr 2012. The objectives were:

- To develop the skills for writing research proposals that can win funds from donors focusing on the needs of the stakeholders.
- To give practice in writing various components of a research proposal.
- To explain the use of result framework.
- To develop a good project design and estimate that is rationally accepted.

The Workshop consisted of a blend of lectures with basic inputs. These were on 'Projects and Funding Agencies,' 'What is a Winning Type Research Project?,' 'ICAR Perspective for Research Funding,' 'Project Technicalities and Tips on shaping the Projects,' 'Overview to Writing Full Research Proposal,' 'Developing a Good Research Proposal,' 'Preparing budget,' 'Results Framework,' and 'General Writing Tips.'

e-Learning using MOODLE at IIT, Kharagpur

Twentythree participants from the AAU, Anand, PAU, Ludhiana, from TNAU, Coimbatore, and 18 from IIT-K in the cadres of Assistant Professor, Associate Professor, Professor, Research Scholar, Research Associate and SRF were trained from 4 to 5 Aug 2012. The objectives were:

- To bring awareness on digital content development methods.
- To sensitize the participants the concepts of e-learning and e-content management.
- To demonstrate the installation and working with MOODLE.

The programme was covered in eight sessions. The teaching strategy consisted of lectures, demonstrations and discussions. Participants were sensitized on e-learning and its implementation through open source methodology in a consortia mode, emphasizing the modus operandi in establishing their e-courses in a project approach.

Special MDP for Head of Divisions, IARI in Shimla

"Strategies for Enhancing the Performance of Head of the Divisions of IARI," was the special MDP conducted by NAARM in IARI, Shimla from 4 to 7 Sep 2012. This was based on an initiative by the Director, Indian Agricultural Research Institute, ICAR, New Delhi. The contents of the MDP were 'Management of People at Work,' 'Stress Management,' 'Teamwork – Desert Survival and Broken Squares,' 'Interpersonal Relationships,' 'Inter-team Interaction – Win as Much as you Can,' 'Personality Profiling,' 'Keeping with the Times,' 'Change Management', 'Change Management – Game,' 'Change Management – Wrap-up,' 'Leadership makes a Difference', 'Round-table Experience Sharing' and 'Way Forward – Take off.' The participants were Drs D.V.K. Samuel, Head, Division of Agricultural Engineering, A.K. Vyas, Head, Division of Agronomy, T. Jankiram, Head, Division of Floriculture

Courtesy: IARI, New Delhi

The participants at the special MDP conducted by NAARM in IARI, Shimla from 4 to 7 Sep 2012 get together for a group photograph. Left to right: Drs Dharam Pal, Chander Parkash, D.V.K. Samuel, A.K. Vyas, T. Janakiram, V. Tonapi, K.H. Rao, A.K. Saxena, M.M. Anwer, V.T. Gajbhiye, Y.P. Sharma, Jagdish Kumar, R.D. Rai, B.S. Dwivedi, K.K. Pramanick and R.V.S. Rao.

and Landscaping, V. Tonapi, Head, Division of Seed Science and Technology, A.K. Saxena, Head, Division of Microbiology, IARI, New Delhi, V.T. Gajbhiye, Head, Division of Agricultural Chemicals, R.D. Rai, Head, Division of Biochemistry, IARI, New Delhi, B.S. Dwivedi, Head, Division Soil Science and Agricultural Chemistry, Jagdish Kumar, Head, IARI Regional Station, Wellington, Chander Prakash, Head (Incharge), Regional Station, Katrain, Y.P. Sharma, Head, IARI Regional Station, Shimla, Dharam Pal, Incharge, IARI Regional Station, (CHC), Tutikandi and K.K. Pramanick, Incharge, IARI Research Farm, Dhanda, Amartara Cottage, Shimla.

The participants in the special MDP conducted by NAARM in IARI, Shimla from 4 to 7 Sep 2012 were given hands-on-training in tackling unforseen situations.

Courtesy: IARI, New Delhi

Training in Educational Methodology

"Advances in Educational Methodology and Instructional Technology" was the ICAR sponsored Summer School, held at NAARM, Hyderabad from 5 to 25 Jul 2012. Twentyfive Assistant Professors participated. The objective of the summer school was to bring awareness about the philosophy of educational methodology and instructional technology for student-centric approach, to sensitize the participants about foundations of instructional design, development and delivery, and to provide an insight into different methods of teaching and learning. The school imparted knowledge and skills on educational technology, teaching-learning effectiveness, technology-enhanced learning including e-learning methods, e-teaching, evaluation of e-learning and teaching, e-learning software, skill development in multimedia, motivation, students' performance monitoring and evaluation. The participants were from ANGRAU, Hyderabad, College of Agricultural Engineering, Guntur, ANGRAU, Khammam, Ag-

M. Ravi

Seen in the photograph are participants in the Summer School, held at NAARM, Hyderabad from 5 to 25 Jul 2012.

ricultural College, Aswaraopet, CVSC&AH, CAU, Selesih, Mizoram, DUVASU, Mathura, GBPUAT, Udhamsinghnagar, IARI, New Delhi, Junagadh Agricultural University, Veraval, College of Forestry, Thrissur, KAU, Palakkad, Veterinary College, Bidar, SHIATS, Allahabad, SKUAST, Jammu, SKUAST, Sopore, SVVU, Proddatur, and Hyderabad, Fisheries College and Research Institute, Thoothukudi, TANUVAS, Chennai, TNAU, Tiruchirapalli, Agricultural Engineering College and Research Institute, Kumulur, Agricultural College and Research Institute, Vallanadu, and UAS, Raichur.

Specialised Training for CAZRI, Jodhpur

A specialised short-term training programme was conducted for "Improving Efficiency of Administrative and Accounts Personnel of CAZRI, Jodhpur," from 24 to 27 Apr and 5 to 9 Oct 2012 in CAZRI, Jodhpur as well as a specialised short-term training programme for "Improving Efficiency of Technical Personnel of CAZRI, Jodhpur," from 24 to 27 Apr 2013, 4 to 8 Nov 2012 and 19 to 22 Nov 2012. The objective was to provide opportunities for the personnel to understand the importance of human relations at work and to develop appropriate skills with a view to enhance their efficiency and effectiveness. The programme schedule comprised of lectures on "Human Relations Management," "Personality Development," "Strategies for Stress Management," "Cleanliness at Work Place," "Trust Building, Task Achievement – An Experimental Exercise," "Role Perception," "Positive Reinforcement – An Experimental learning," "An Experimental Exercise for Planning, Helping, and Performing Better," "Interpersonal Communication," "Conflict Management and Teamwork."

Capacity Building at PDKV, Akola

NAARM conducted an off-campus training programme in "Capacity Building" at the Dr Panjabrao Deshmukh Krishi Vidyapeeth, Akola for 20 faculty members comprising of Professors, Associate Professors and Assistant Professors from 5 to 8 Nov 2012. The objectives were to impart training in sound theoretical knowledge, hands-on-experience and practicing skills in "Management of People at Work," "Stress Management," "Teamwork," "Personality Profiling, "Inter-personal and Inter-team Interactions," 'Change Management," and "Leadership."

Orientation Programme in KVAFSU, Bidar

Thirtythree Assistant Professors from the Bidar campus of KVAFSU were trained in the orientation programme from 13 to 18 Dec 2012 in Bidar. The objectives were: To orient new recruits of KVAFSU on basics of teaching-learning process, communication, presentation, technology in teaching-learning, classroom management; to sensitize on administrative procedures pertaining to their work environment; and to give an overview of agriculture and agricultural education. The programme encompassed all aspects that a fresh recruit into an educational environment is expected to be equipped with. Lectures were given by Drs P. Ramesh, K.M. Reddy, Ashok Pawar, B.S. Sontakki, G.R.K. Murthy, M.D. Suranagi, V.C. Ketigari and S.L. Goswami.

Faculty Development Programme for TANUVAS

A special FDP was conducted for the faculty members of the Tamil Nadu Veterinary and Animal Sciences University (TANUVAS) in Chennai from 3 to 7 Dec 2012 and from 18 to 22 Mar 2013. The objective was to train the faculty in "Management of People at Work," "Personality Profiling," "Role Perception," "Transactional Analysis," "Motivation," Inter-personal Interactions," "Teamwork," "Inter-team Interactions," "Leadership," "Stress Management," and "Change Management."

Research

Enhancing Resilience of Agriculture to Climate Change: Role of Technologies, Institutions and Policies; Sub-Project Component: Identify Adaptation Strategies, Mitigate Climate Risks and Estimate their Potential Costs and Benefits

The objectives were to conduct focus group discussion (FGD) and collect primary data related to farmers' perception about climate change, its impact on crops and various strategies for adaptation and to compile the data and to analyze the data to estimate the likelihood loss due to extreme weather events.

FGD were conducted in the mandals of Amalapuram, Gollaprolu and Uppada Kothapalle in the district of East Godavari in Andhra Pradesh. This district was selected as it was frequently affected by cyclones and flooding. A total of 27 villages were randomly selected for FGD. Preliminary analysis was conducted on the data collected to estimate the extent of damage caused by the climatic extreme events. The analysis was performed crop-wise and for different levels of incidence of climatic adversity. The frequency of incidence of cyclone with flood was once in four years with severe and moderate cyclones occurring alternatively. The average cost of cultivation of rice was about ₹ 50,000/ha. During severe cyclone, the rice had 100% damage. It was 20% during low intensity cyclone. The annualized average damage expected due to cyclone in rice was about ₹ 7,500 resulting in a risk free annualized net return of ₹ 5,520/ha. In banana the expected annualized risk free net returns turned out to be negative (- ₹ 250). This showed that the cultivation of banana was unsustainable in this region. Similar results were obtained for chilli (mandal Chebrolu), *kharif* rice (mandal Uppada Kothapalle) and *rabi* rice (mandal Uppada Kothapalle). However, at Nagulapalle, cultivation of rice and urdbean were profitable. The annualized risk-free return was ₹ 6,211 in rice and ₹ 3,547 in urdbean.

Growth of Food Retail Chains and Supply Chain Management of Vegetables

The objectives were to collect primary data from farmers regarding cultivation of vegetables and marketing and associated problems; and to collect primary data from market middlemen including commission agent, wholesaler, traditional retailers, hawkers, farmers selling vegetables at Rythu Bazaar, and modern retailers regarding the marketing cost and issues related to the channel.

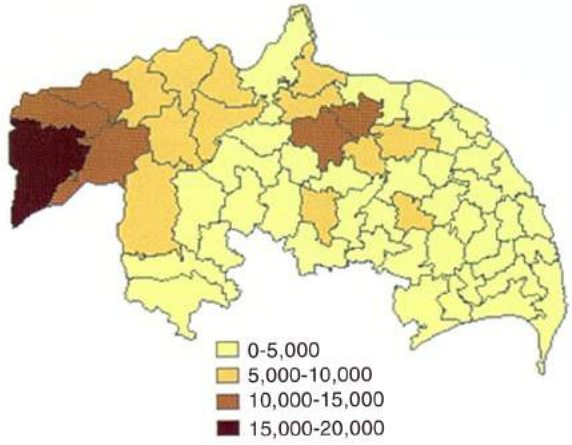
The primary data was collected from 25 farmers, 10 market intermediaries including modern retails around Chennai and Coimbatore in Tamil Nadu and also in Puducherry. Survey was conducted in wholesale *mandis* in Chennai and Coimbatore and the rythu bazaar in Coimbatore and Puducherry. Information about vegetable marketing was also collected from different retailers including small shop, hawkers, and small retail markets. The procurement, handling and selling of vegetables by the modern retailer were also surveyed. Consumer buying behaviour and preferences were also recorded in the survey conducted at Coimbatore. The data was analyzed to calculate the marketing cost and marketing margin in different channels. Garette scoring technique was used to identify the important problems faced by growers, middlemen and consumers. It also showed that the total vegetable business of modern retailers at present was miniscule but this business sector was witnessing a faster growth albeit increased competition.

Strengthening Statistical Computation for NARS

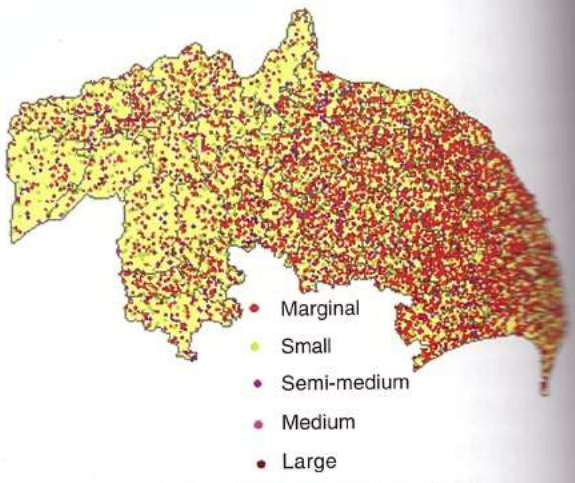
The objective of this project was to conduct training programmes at NAARM and also in other institutes. The following programmes were conducted: "Survey Design and Data Analysis using SAS in Social Sciences" at NAARM from 28 Jan to 6 Feb 2013; and "Data Analysis Using SAS" at the College of Agriculture, ANGRAU, Bapatla from 28 Feb to 2 Mar 2013.

IP Management in Public Private Partnerships – Agrobiodiversity, Geographical Indications and Traditional Knowledge

The objectives of the project were to develop a com-



Total production (t) of chilli in Guntur district of Andhra Pradesh in 2011.



Mandal-wise types of farmers in Guntur district of Andhra Pradesh.

prehensive understanding of GIs with respect to their availability and suitability to enhance the socio-economic conditions and livelihood security of the rural poor and to provide policy support for development of an integrated mechanism to protect GI, agro-biodiversity and traditional knowledge, and also incorporate innovative interventions for the socio-economic upliftment of rural poor and farmers

One of the major objectives during the current year was to develop a case study for technology valuation and application of Geographical Information System (GIS) in one GI product for appropriate policy intervention to strengthen the public private partnership (PPP) for enhancing the socio economic status of rural poor. The Analytic Hierarchy Process (AHP) was used for identifying and prioritizing the criteria for technology valuation. Data collected from 300 respondents clearly indicate that most scientists had given priority for bringing transparency in the valuation process. They also target the valuation process towards the socioeconomic upliftment of farmers.

For the GIS application, a registered Geographical Indicator Guntur Sanam Chilli was identified to develop the case study. The Guntur chilli is produced in five districts of Andhra Pradesh with the most significant one in Guntur district. Results of the preliminary studies reveal that most of the Guntur chilli was produced by medium and large farmers. The areas of marginal and small farmers had the least production.

Evaluation of Collaborative Communication Tools in Online Environment

The objectives were to create awareness among the scientific community about online collaborative tools through real case applications; to apply web-based methodologies for improved information communication related to content management and learning environment; and to identify and customize appropriate GIS-based online knowledge management tools.

For evaluation 200 web-based communication tools were identified. After screening these on defined parameters, 27 tools were selected for detailed evaluation. These were 'Google Docs,' 'Thinkature,' 'Live Meeting,'

Background of respondents (n 359) in benchmark study to understand the awareness and utility level with respect to agricultural research.

Age	25-45 years	66.5%
	45-55 years	28.9%
Qualification	Doctorate	62.6%
	Master's degree	32%
Discipline	Agriculture	71.3%
	Science	12.2%
Occupation	Researcher	70.1%
	Teacher and student	25%

'Picassa,' 'Dropbox,' 'Notability,' 'Skype,' 'Dimdim,' 'Slideshare,' 'Flickr,' 'Webex,' 'Mendley,' 'Eprint,' 'Zoho,' 'Qualtrics,' 'Writeboard,' 'Scribbler,' 'Project2manage,' 'Spicebird,' 'Placeware,' 'Knimbus,' 'Mindquarry,' 'Share Point,' 'Agrobase,' 'Mind Meister,' 'Go to Meeting,' and 'Slideshark.'

The first activity was to conduct a benchmark study to understand the awareness and utility level with respect to agricultural research. A questionnaire survey was conducted with 359 respondents – most of them were agricultural researchers with doctoral degrees and between 25 and 45 years of age. A few reported regular use of the five communication tools – Google Docs (36.7%), Skype (25.6%), Picasa (14.7%), e-Print (10%) and Dropbox (10%). The results also revealed that a significant numbers of scientists knew some tools but never tried these – Flickr (45.1%), Dropbox (35.4%), AgroBase (31.5%), e-Print (29.8%) and Writeboard (26.1%). Based on this information and with the objectives of the project, the successful practical application of Webex, Flickr and Slideshare was done in various programmes at NAARM.

Another component of the project was eLearning module on PRA. A video and multimedia-based module was developed. The module on village transect was tested with FOCARS 97. The results clearly reveal that 80% of the respondents could answer more than eight questions correctly, and a few of them could answer all the 10 questions. For the purpose of appropriate modifications in the learning process through eLearning module, the responses from these 106 respondents were critically examined to find out the difficulty level of the questions.

In the project, efforts were done to incorporate GIS as collaborative communication tool. A case study was developed to apply GIS in managing the research experiment farm. The ANGRAU farm was digitized and various layers were incorporated to develop a case study for maize and rice research plots.

Information System for All-India Coordinated Research Projects of ICAR

The objective of this project was to develop an information system, which can facilitate planning of experiments at the AICRP; Maintain information about the experiments at a centralized place; Allow enter/upload of experimental data during the course of experiment (or at the end); Ability to carry out appropriate statistical analysis and automate uniform reporting process; Provide secured access to data for authorized users; Flexible/generic so that any AICRP can use; and Aims at standardization of data collection and statistical analysis across AICRPs.

The different roles proposed were Experimenters, Experiment Incharges, Head/Project Coordinator/Project Director and Administrator. The roles of the different users and their functions are given in the Table.

Web interfaces were created during the year. These were:

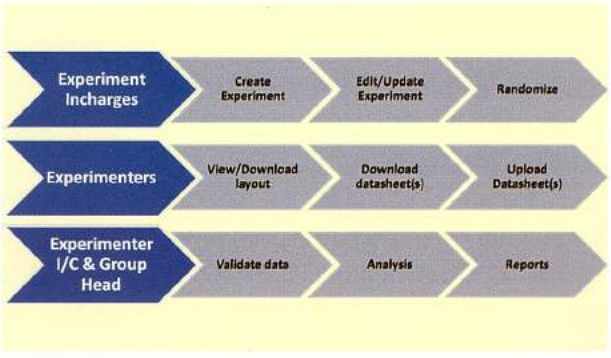
Creation of Experiments: Setting experiment title, objective, type, parameters to be collected, locations where the experiment is to be conducted along with location incharges; treatments, and statistical design.

Randomization of Experiments: Randomization of completely randomized design, randomized block design, alpha designs, factorial experiments and split plot design. The randomization module also provides option for coding of treatments.

View Layouts: Experimental layouts can be downloaded with the complete information such as experiment title, observations to be collected and randomized layouts for a particular location. The layouts would be available in PDF.

Data Sheets: The data sheet for data entry has been provided for each experiment.

The process flow of the Information System.



User roles and their functions.

Role name	Role tasks	Remarks/Permission
Experiment In-charges	Plan and create Experiments, assign experimenters at different locations, randomized plans, Data quality checking, approve data submitted, Analysis	Usually from the PC unit; responsible for the set of experiments created; Cannot modify experiments created by other experiment in-charges
Experimenters	Conducting experiments; download datasheets/upload datasheet	Can view/download/ upload layout/datasheets assigned to them by experiment In-charge; usually at individual locations
Group Head	View experiments planned for the year; Periodic reports on data upload status, data analysis	Can view information on all experiments
Admin	Maintenance of the system; create users and assign roles	-
Public/Guest	-	View any reports published for general use

Upload of Data: Upload module consists of data sheet, validation checks (for missing values) with other experimental condition details.

The analysis module is still under testing and will be completed in the coming year.

Intellectual Property Landscaping Studies of Veterinary Immunobiologicals: Technology Assessment through different Informational Sources

Emerging R&D trends in veterinary immunobiologicals (veterinary vaccines and diagnostics) for important OIE listed animal diseases were discerned by patent mapping tools. Patent analysis is a known valuable approach that utilizes patent data to derive information about growth of R&D process leading to technology development and understand continuous flow of knowledge from science to technology development *per se*.

Patent data were collected from various informational sources, namely, free databases of international and national patent offices (USPTO, EPO and WIPO); no-charge providers (Google patents, Free Patents Online) and charge providers (Thomson Innovation, Questel). A set of subject-specific keywords and standardized search strings using Boolean operators and truncation marks were formed/identified. The key strings were then used to execute the search in different fields such as Title, Abstract, Description, Inventor, Assignee, Publication Year, Priority Year, Classification code, and the results were compiled. The relevant patents were identified and exported to MSExcel® sheets for further analysis. Accordingly, scrutiny of search results and analysis of on-target records, normalization of analyzed data and mapping of bibliographic as well as technology related information were carried out.

The diseases selected for this landscape study included eight viral, nine bacterial, two rickettsial and 10 parasitic diseases of livestock and poultry.

The target diseases of viral origin were Newcastle's disease, infectious bursal disease, bluetongue, swine fever, *Pestispetits ruminants* disease of small ruminants, Marek's disease, rabies and rinderpest. The diseases of bacterial origin were haemorrhagic septicaemia, bovine tuberculosis, paratuberculosis, brucellosis, anthrax, mastitis, fowl typhoid, salmonellosis, tetanus and glan-

ders. The parasitic diseases were leishmaniosis, toxoplasmosis, trichomonosis, amoebiosis, echinococcosis/hydatidosis, cryptosporidiosis, trypanosomosis, sarcocystosis, equine protozoal myelitis, lung worm disease, gastrointestinal nematodosis and toxocariosis. The patent analyses *inter alia* addressed the following parameters:

Bibliography: Key players, priority year (PY), International patent code (IPC), geographical distribution, assignee versus PY, assignee versus IPC code, assignee versus country code, PY versus IPC, and PY versus country code.

Technology mapping: Assignee versus IPC, assignee versus target disease, assignee versus vaccine, PY versus type of patent (process/product/method), PY versus focus of patent (diagnostic kit/vaccine), PY versus target disease and PY versus vaccine (generation of vaccine).

A database is under development with bibliographic and technology mapping based on extensive analysis of patent data sets in the area of veterinary immunobiologicals (diagnostics and vaccines) and applications in disease management, technology transfer, markets trends, technology diffusion-market drivers and consumers.

Assessment and Development of Organizational Citizenship Behaviour for Promoting Efficiency and Effectiveness in NARS

A project was undertaken to develop an analytical framework to promote organizational citizenship behaviour among scientific personnel. The specific objectives were:

- To identify the indicators of organizational citizenship behaviour to work in teams cutting across the disciplines and institutions.
- To measure and analyze organization citizenship behaviour among personnel of NARS.
- To determine the antecedents of organization citizenship behaviour.
- To develop strategic plan for promoting organization citizenship behaviour of scientific personnel working in consortiums.

Personal interaction with the respondents who engage in OCB revealed that they were emotionally attached with the organization and showed affective commitment. They liked to stretch themselves to contribute to the growth and development of the organization. They would continue to spend the remaining service as a loyal employee. They felt that it was their obligation to take extra work load as the organization provided all the opportunities to them to grow to their present position. They would not like to join any other R&D organization, even if they were offered more salary and perks. They were highly satisfied with their job and would like to serve the organization with more responsibilities.

Role perception of respondents engaged in OCB was highly satisfactory and was observed to influence job satisfaction. It lead to their commitment to the organizational goals for which they exhibit organizational citizenship behaviour. The respondents perceived that they were central to the organization and their knowledge and skills were highly integrated in the present job. They felt that there was ample opportunity for proactivity and creativity in the task being pursued. They foresaw tremendous professional growth and could serve the society for a larger cause. The task and their role were challenging. Hence they were enthused and motivated to work for long hours. They expressed that the work environment was very cordial and the colleagues were helpful in pursuing their goals. The job satisfaction level was very high and it was strongly correlated with the level of role perception.

The extent to which an employee exhibited OCB was a function of his/her motivation, ability and opportunity. Motivation determines how hard an employee tries to engage in the behaviour and the combination of ability and opportunity determined whether the employee could successfully exhibit the behaviour. Observations and discussions revealed that the occurrence of OCB was possible due to strong self-motivation levels and acquisition of desired knowledge and skills needed to perform their job. The respondents opined that the manager or leaders' role was crucial in providing the opportunity.

The interaction with the scientific personnel, who

were observed to exhibit OCB revealed that there was a strong linkage between their openness to experience and OCB. Although, a logical linkage between their agreeableness and OCB was expected, the correlation was very weak. They showed clear agreement only on issues related to training policy, career advancement scheme, but expressed strong dissatisfaction on support services of administration, audit and finance.The pro-social attitude and behaviour proved to be positively correlated to OCB. The employees scoring high on openness to experience and pro-social attitude were very likely to engage in OCB than those employees who showed lower levels on these attributes.

Interactions with the respondents who exhibited OCB revealed that their contribution helped the organization to get the visibility and reputation in their specialized area. They derived utmost job satisfaction when their work was published in the national journals and international journals. As more advances take place in the instruments employed for the analysis of samples, and the techniques and procedures adopted for getting accuracy of the measurements, they acquired the much needed knowledge and skills to perform the tasks. It was observed that getting the recognition as a specialist in their work resulted in greater job satisfaction. The respondents recognized the role of the organization's support in enrichment of their knowledge and skills and they felt that it was their moral responsibility that their knowledge and skills should be used to serve the organization.

During discussions, the respondents clearly expressed that they felt suffocated to work with autocratic leaders and felt unpleasant to work with inflexible and dictatorial managers. The scientists and technical officers never felt emotionally attached to the organization during their regime and in fact did not work wholeheartedly and never thought of putting their best possible efforts in executing their functions. There was a clear indication that in a research organization such as the ICAR, scientific personnel expected freedom and autonomy to a certain extent and looked forward to supportive and empowering leadership. The scientists were ready to shoulder responsibilities in achieving the organizational objectives and wished to be active partners in the organizational success and growth in trustful environment. They were willing to adhere to all the rules and regulatory framework and would like to be accountable for their functioning with a reasonable freedom for failure, which is unique to the nature of work—research. They perceived the present system of monitoring and reporting to multiple authorities on monthly and quarterly basis did not yield any significant outcome. This made them to feel that the organization does not trust their scientists.

The respondents engaged in OCB expressed that the committed employees were gradually decreasing and hence appropriate measures should be taken in the recruitment process and capacity building of the personnel. They were of the opinion that the selections were being made purely on the basis of the academic record and experience. It would be better if a weight age of 20% to 30% to personality profile was given to improve the suitability of the personnel for working in teams and also for achieving organizational goals.

Organizational Change for Promoting Innovation through Research Consortia

This sub-component of the project was aimed to synthesize the experiences of change management and to identify issues for change management.

A model, specifically developed for studying change in agricultural research organizations, emphasized the study of five important areas for understanding change. These included managing self development and leadership development, facilitation for change, managing research and quality of science, facilitating partnership, and managing teamwork.

Areas focused for study (as per the model), were facilitation for change, quality of science, and facilitating partnerships and institutional arrangements for impact. Four studies were taken up. These were: 'Case Study of Change brought about through Culture and Institutional Arrangements,' 'Case Study of Sustainable Livelihood Project,' 'Revenue Generation by Institutes—An Analysis,' and 'Publication Profile of Scientists and Development of a Case Let.'

One of the leadership responsibilities was to develop a culture among the employees to enhance performance. Ear-marking specified time for doing productive work was one such approach. This was attempted through sustained efforts and through the Director of the institute. The whole approach went through the process of initiation, motivation, diagnosis, information collection, deliberation, proposal, and implementation. These stages were achieved through a systematic process of convincing scientists to follow the new habit. With the commitment from the top leader, a success of 95% of adopting the new practice was achieved. The effect of putting this new practice on the performance and productivity is under study.

A case study of a successful NAIP project on 'Sustainable Livelihood' was taken up. Analysis of the project indicates that not only the credibility and capability of the project team was needed for the success of the project, but a host of human management factors had helped in the successful implementation and conclusion of the project. Whereas, a systematic project management could help in implementing the project well, aspects such as innovativeness, doing and approaching things differently, and empowerment played an important role in the successful implementation of the project.

Analysis of the revenue generation by ICAR institutes brings to light a few issues. Revenue generation is not to be viewed as the responsibility given (target given) and target achieved. It is to be understood from a system perspective and is related to leadership, HRD, team building, change, and performance. Leaders have a great role in using revenue generation as a performance-linked, culture-embedded process to give sustainability to the institutions.

Analysis of the information on the publication details of a few ICAR institutes pointed out to the need for looking at the number of publications by a scientist in a given year, authorship issues including the authorship for the leader, and the impact of score card system on these. A case let for capacity building purpose was developed based on the information collected from research institutes.

NAIP Experiences and Future Implications

The NAIP helpdesk undertook a study to assess experiences of NAIP sub-projects. The objective was to get a broad outline of gains due to NAIP in Indian NARS in terms of:

- New processes that were brought about by various sub-projects and the advantages in terms of administrative, financial and management dimensions. This would include various good governance and new management practices that came in to force explicitly because of NAIP.
- New thinking towards research in Indian NARS.
- Public-private partnership experiences and suggestions for future.
- Experiences and innovations in addressing farmers needs and issues.

A nationwide survey was carried out seeking experiences of stakeholders in 15 sub-projects executed in Tamil Nadu, Kerala, Andhra Pradesh, West Bengal, Maharashtra, Assam and Haryana.

Some of the major operational issues encountered by various sub-projects and the plausible ways to overcome them were:

Selection of Partners: Selection of partners without interest had adversely affected the overall outcome. Therefore, selection of right partners with commitment and capabilities had to be ensured for successful implementation of the sub-project in consortia mode. This was more so whenever public private partnership was promoted by involving private institutions.

Involvement of Partners: Involvement of partners only at the implementation stage had led to their half-hearted participation. In order to ensure smooth functioning of the sub-projects, sincere efforts had to be made to involve the partners at the concept development stage itself.

Participation of Consortia Principal Investigators (CPIs): Frequent change of CPIs, particularly at the end of the sub-project, had affected the overall outcome of the project. As far as possible, the CPIs should continue till the project is completed.

Coordination among the Partners: Lack of coordina-

tion among the partners (as reflected in that one partner not knowing what others are doing because of separate funding and independent functioning) had affected the smooth functioning of the project.

Ensuring Administrative Support: Although the CPIs were provided with Office Assistants to support them in administrative matters, they still had to fall back on their regular administrative and financial staffs who were less motivated for want of adequate incentive for extra work done by them. It was necessary to adequately compensate them by providing honorarium from the institutional charges collected.

Procurement Process: Though the World Bank procedure had worked well for the procurement of costly equipments, getting petty things through open tender had become a problem for want of response from the suppliers. Therefore, the institutions may be permitted to follow their own procedure for the procurement of materials costing less.

Import of Equipments: Delay in the supply of necessary certificates by the PIU to avail customs duty exemption for the imported equipments had led to payment of demurrage charge by the sub-projects. In order to avoid this, timely release of necessary certificates had to be ensured by PIU.

Civil Works: Construction of buildings such as slaughterhouse through private contractors, as per World Bank norms, had created problems. Flexibility should be given to the sub-projects to get the work done through Governmental Agencies such as the CPWD and State PWDs.

Fund Release by PIU: Delay in the release of fund to the sub-projects by PIU, particularly during the extension period, had created serious operational problem. Therefore, timely release of funds had to be ensured by the PIU. Release of fund to the lead institutions having more than one sub-project, in one lump without details on allocation to individual projects had also become an operational problem. Therefore, release of funds along with necessary details had to be ensured.

Sanctioning Power: Sanctioning power vested with the CPIs far exceeding that of the very senior officials in the State Agricultural University had created an administrative problem. Some flexibility had to be provided in such cases by allowing the institutions to follow their own norms.

Auditing of Accounts: Administrative problems arose because of an insistence on auditing of accounts of sub-projects, particularly those operating in the University, by the empanelled auditors. Some flexibility may be shown by allowing them to get their accounts audited through local fund audit (LFA) mechanism.

Monitoring and Evaluation Mechanism: Although, very sound mechanism had been made an essential part of the NAIP to closely monitor the progress for taking mid-course corrections and to evaluate the final outcome of the sub-projects by internal and external teams, the work done by some sub-projects had not been subjected to timely monitoring and evaluation leading to frustration. This had to be avoided.

Report Submission: Though submission of periodic reports, both technical and financial, constituted an integral part of project management, frequently asking the sub-projects to submit the same information in different formats to meet the requirement of various agencies such as the World Bank, PIU, ICAR, Expert Committees, has to be curtailed so that scientists' have time for doing research. In order to get over this problem, sound database management system has to be put in place at the PIU.

Communication with PIU: Lack of timely response from PIU to various communications received from the sub-projects had led to operational problems. This called for strengthening of the PIU with adequate manpower (both technical and support staff) and facilities without leaving everything to the less-trained and lowly paid contractual staff.

Strengthening of PIU: The PIU had to cater to all projects with each National Coordinator catering to the needs of over 40 sub-projects. This led to a serious management problem. It was felt that a complete make-over was required for the PIU by: Strengthening it with adequate manpower employed/deployed on regular basis; Developing and making operational a sound management information system (MIS); Building strong coordination among the Technical, Administrative and

Financial wings; and Avoiding very frequent change of National Coordinators responsible for individual Components.

Assessment of the Maize Situation, Outlook and Investment Opportunities to Ensure Food Security in Asia

The objectives were to characterize the maize production technologies and its dissemination to the farmers; To identify the gaps in entire value chain of maize from sowing to consumption in the region, and; To estimate the investment requirements to exploit the full potential of the sector.

The project is funded under MAIZE-CRP by CIMMYT, Mexico to examine the current maize situation in Asia, under which the study is being carried out in India, Bangladesh, China, Indonesia and Pakistan. In the current year, FGD meetings were conducted at five locations representing major maize growing states, Bihar, Madhya Pradesh, Karnataka, Rajasthan and Uttar Pradesh. Different stakeholders in maize sector participated in the meeting to share their views about future prospects of maize in the regions. Preliminary analysis showed that the area of cultivation of maize in India was growing continuously. This was due to the expansion of area in non-traditional region such as Karnataka and Andhra Pradesh. Irrigated maize in the country was also complementing the total maize area and showed an upward trend. The irrigated area had doubled since 1950–51.

Technological Forecasting and Assessment of Future Fly Ash Use in India

The objective of this project was to develop a system dynamics simulation model for utilization of fly ash.

System Dynamic Simulation: Thermal power constitutes about 66% of the total electric power generation in the country. The future projection of this sector depends on the growth path, which probably would follow the past trend, or a rapid developmental path commensurate with the growth of planned economic growth (GDP). During the last decade, the annual growth rate of coal based thermal power generation was about 5%.

Conceptual Model: The system dynamics approach is an effective method to analyze various scenarios and examine impact of various policy options. Basically, the system consists of two sub systems, namely, generation of fly ash, and utilization of fly ash. For the present study the following functional relations were considered for development of the conceptual model:

Fly ash generation = f (growth of coal based power generation, coal consumption, quality of coal)

Fly ash utilization = f (growth of economic sectors, quantum of per unit use, incentives, spread of adoption)

Simulation Model: Identifying the associated variables in the delineated dimensions of the conceptual model, the dynamic simulation model was developed and was validated using the secondary data from 2000 to 2010. A study of the model showed that the model closely forecasted GDP and the coal-based power generation. This could be used effectively for further analysis.

Fly Ash Generation and Utilization Analysis: The fly ash generation and utilization scenario over the next 20 years was developed and analyzed using the validated model. Considering the present growth in power generation and future demand it was assumed that the coal-based power generation would grow between 6%/year and 8%/year. The level of power generation during the next 20 years was obtained from the simulation model.

Simulated Forecasting of Requirement of Fly Ash: Utilization of fly ash in agriculture is primarily confined to soil amendment applications. The four types of land identified for the analysis from the experts' consultations and approximate initial area to be covered in base year (Table 1) were considered in the simulation model.

In addition to soil amendment, fly ash is also used for other purposes such as vermicomposting, pesticide base, and in the nursery. About 5% of the fly ash is assumed to be used as soil amendment for all other such purposes. The recommended doses for arable soil is 20 t/ha and for the other three soil types the dose is 50 t/ha. Analysis is made to derive utilization of fly ash based on two cases of study – policy for its promotion in agriculture and incentive or subsidy for a limted period.

Table 1. Recommended and initial area for application of fly ash in agriculture.

Type	Recommended (Mha)	Initial area to be covered in the base year (Mha)
Arable land	10	0.15
Degraded land	2	0.03
Waste land	16	0.25
Scrub forest	3.2	0.05
Total	31.2	0.48

Promotion for Area Expansion: As there are no special schemes for promotion of the use of fly ash in agriculture, coverage would depend on the policies of the Government policies, and special schemes aimed at its promotion. The study assumed a policy framework in place during the XII Plan. It was assumed that the areas of different soils would increase at 10% every year during the next two decades.

Promotion with Incentives: The adoption of the fly ash for soil agricultural purpose depends on the adoption by the user on realization of the accruing benefits. The behaviour of this adoption is assumed to follow normal growth behaviour. With slower adoption in the initial stage, it increased rapidly and achieved a maximum after eight to 10 years. In this exercise, it is assumed that full adoption would take about 15 years. The second factor that affected the adoption was the subsidy/incentives provided for adoption. This study assumed that the promotion scheme would be time bound – incentive provided in the initial stages would be gradually withdrawn over the years so that the process became self-sustainable. This would enable the incentives to be given to new areas. Overall adoption is resultant of these two dimensions.

The simulation results showed that the impact of subsidy after initial increase gradually reduced over the years, as the farmers were convinced of the benefit flow from adoption of fly ash in 10 years. In the present analysis the contribution of subsidy reduced after 10 years after launching the programme. This trend suggested that the subsidy component could be gradually withdrawn with increased emphasis on strengthening the extension activities for creating awareness regarding benefits of adoption of fly ash. However, the model suggests need for incentives during the XII and XIII plan periods.

Though pond ash was available in plenty, the logistics of transporting it to farm fields would have a bearing on expansion of the area of utilization of fly ash. About 50% of the fly ash that was generated is being used now. This would have to be 100% in the next five years so as to comply with Government regulations. Considering this, an increase in area at 10%/year will be able to utilize about 100 million t/year by the 10th year for agriculture.

Technology Delivery Models for Less Favoured Areas

The existing technology delivery models in less favoured areas were documented and analyzed. Krishi Vigyan Kendras, non-Governmental organizations-led, farmer-led, Private agribusiness companies, ICT-led, and ATMA, continued to be in the forefront of technology delivery while demonstrations, farmer schools, training, exposure visits emerged as extension strategies for technology delivery. Linking producers to market remained the most critical issue.

Effectiveness and Training Transfer of Centre for Advanced Faculty Training (CAFT) programmes at NARS

The objectives were:

- To assess the perception of participants towards effectiveness of CAFT programmes.
- To capture the training transfer by participants and resultant transfer outcomes.
- To assess the perception of peer group and deputing authorities towards performance of CAFT participants.
- To suggest strategies to improve the design, pattern and content of CAFT programmes.

The study was conducted during Jun 2012 to Sep 2012 using ex-post-facto research design. The study

covered six types of respondents, namely, participants of completed CAFT programmes, participants of ongoing CAFT programmes, CAFT beneficiaries with origin from same agricultural university, CAFT Directors, the peer group and deputing authorities of CAFT participants. The collected data were analyzed using descriptive statistics to arrive at meaningful conclusions and pragmatic implications.

Most of the CAFT trained participants had favourable opinion towards pedagogy and training environment of CAFT programmes. A majority of the participants shared their CAFT experiences with their colleagues in an informal manner and utilized such experience in strengthening their research and teaching competencies. The participants of the ongoing CAFT programmes appreciated the pedagogy of such programmes. They also suggested strategies for further improvement of CAFT programmes. The peer group as well as the deputing authorities agreed that there was improvement in the teaching competency of the CAFT participants after participation in the CAFT programmes. They also strongly agreed that the research competency of CAFT participants had improved.

The respondents had favourable opinion towards self-attributes, training design and delivery, organizational climate and transfer outcomes, the four components of training transfer system. The correlation studies suggested that the organizational climate was very important for facilitating transfer of knowledge and skill gains acquired by respondents back at their job conditions. The factors of the training transfer system that influenced the transfer outcomes provided hints for improvement of all the participants, training managers and authorities of the Universities. The results of the study had brought pertinent pointers as implications for refinement of CAFT programmes in terms of pedagogy and training environment/facilities in order to facilitate effective training transfer of CAFT programmes. The study results were presented for peer and expert review in a workshop organized specially for the purpose. Based on the deliberations, a number of implementable recommendations were evolved for improving the visibility, planning, management, evaluation, training transfer and overall impact of CAFT training programmes. Specifically, major recommendations pertain to:

- Aggressive communication of CAFT programmes using multiple channels for attracting most eligible participants.
- Creation of webpage and linking it to the website of ICAR and host organizations is a must for improving visibility of CAFT centres.
- Participant selection through well laid out eligibility criteria to ensure effective training transfer.
- Well researched resource material in hard and soft versions should be mandatory for all CAFT trainings.
- Organization of periodic follow-up workshops by CAFT centres to assess impact, training transfer and for continuous improvement.
- Regular capacity building of CAFT Directors and Trainers in reputed national and international centers.
- NAARM should organize a week-long capacity building programme on "Effective Training Management" exclusively for CAFT Directors.
- Regular up-dating of training needs database by CAFT centres through training needs assessment surveys and stakeholder workshops.
- Increased budgetary support to CAFT programmes to cover up for the escalating costs on lodge, board, logistics and other training expenses and provision of need-based contractual staff for meeting training and research related priority commitments.
- Performance assessment of CAFT centres and a scheme to reward the best CAFT centre through a holistic assessment process.
- Rationalization of CAFT centres vis-à-vis subject areas to accommodate the emerging areas of agriculture and allied sciences.
- Authentic documentation of impact of CAFT training through surveys, case studies and dissemination of the same through web-based and conventional communications.

Post-graduate Educational Programmes at NAARM

Post-graduate Diploma in Management-Agriculture (PGDMA)

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.

Students Get Placements of more than ₹ Six Lakhs

All the 20 students of the second batch (2010-12) of the PGDMA got salary offers of more than ₹ six lakhs in different organizations. The organizations were the 'Nagarjuna Group,' 'Metro Cash & Carry,' 'Aditya Birla Retail,' 'Staragri,' 'Savannah Seed,' 'United Phosphorus Limited,' 'ING Vysya Bank,' 'John Deer,' 'National Spot Exchange' and 'Pfizer.'

4th PGDMA Commences

Twentyfour students joined the 4th PGDMA (2012-14) at NAARM on 2 Jul 2012. They are from Andhra Pradesh, Bihar, Jharkhand, Kerala, Maharashtra, Odisha, Rajasthan, Tamil Nadu, Uttar Pradesh, Uttarakhand and West Bengal. The educational disciplines in their under-graduation were Agribusiness Management, Agricultural Engineering, Agriculture, Biotechnology, CABM, Fisheries and Ocean Studies, Food Technology and Horticulture.

Internships: The students were placed for internship for two months in 'Yes Bank,' 'PI Industries,' 'Pioneer Seeds,' 'Cholamandalam Finance,' 'RBI,' 'Vasudhaika IT Solutions,' 'Monsanto,' 'NSEL,' 'NCDEX,' 'Sino-Chem,' 'Nagarjuna Fertilizers and Chemical Limited,' 'Foertell Business Solutions,' 'Makteshim Agan,' 'SGGPA,' and the 'Government of Madhya Pradesh.'

Post-graduate Diploma in Technology Management in Agriculture

The one year PGD-TMA is a two semester course jointly offered by 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-2011 Certificate Distributed

Dr Ramakrishna Ramaswamy, Vice-Chancellor, University of Hyderabad (UOH), Hyderabad distributed the Certificates for the PGD-TMA-2011 to 52 students who had completed the course at NAARM on 4 Sep 2012. Drs S.L. Goswami, Director, NAARM, E. Haribabu Pro-Vice-Chancellor, UOH, S. Jeelani, Director (Distance Education), UOH and N.H. Rao, Joint Director, were also present.

Students of the 4th PGDMA get together for a group photograph.

M. Ravi

Dr Ramakrishna Ramaswamy (right) hands over the Certificate for the PGD-TMA. Dr S.L. Goswami is in the centre.

M. Ravi

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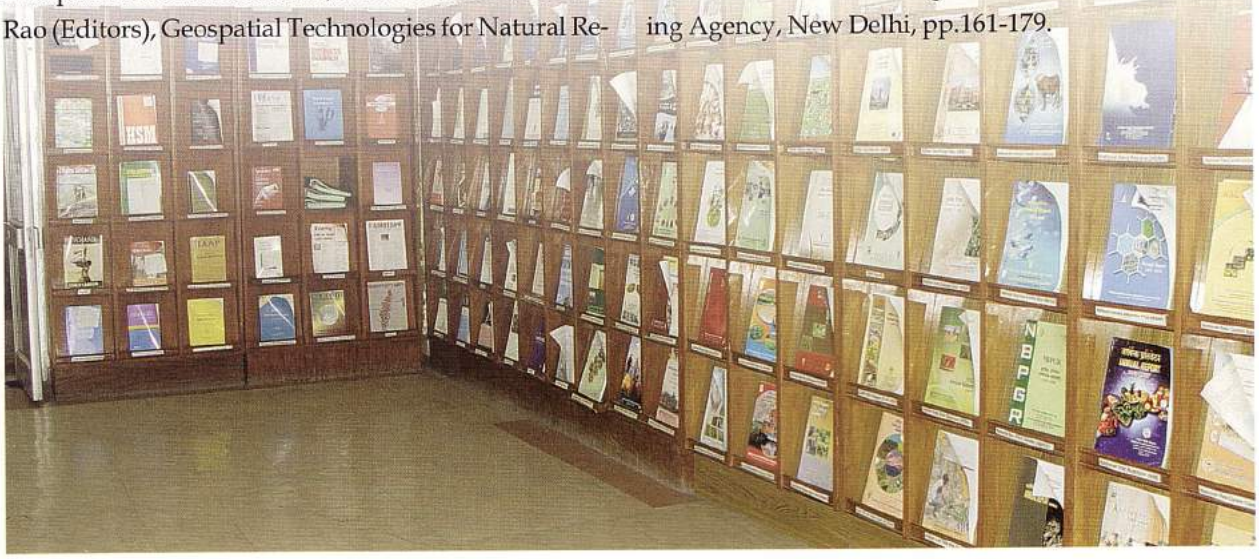


QRT, RAC, IMC, Academic Committee, IRC Meetings

Quinquennial Review Team

The 6th QRT team for NAARM for reviewing the activities and progress of work from 2006 to Mar 2012 was constituted vide letter no. F.No. 6-8/2000-A&P (Edn.), ICAR, New Delhi dated 4 Jun 2012. The committee comprised of:

Dr K.V. Raman, Retired Member, Agricultural Scientists Recruitment Board (ASRB), New Delhi, Chairman.

Dr B.R. Virmani, Chairman, Center for Organization Research and Development Management (CORDM), Hyderabad, Member

Prof. K. Sudha Rao, NUPEA, Member

Dr P.N. Mathur, Former ADG (Extension), ICAR, New Delhi, Member

Dr Kiran K. Sharma, Principal Scientist (Cell Biology) and Director, Platform for Translational Research on Transgenic Crops (PTTC) and Chief Executive Officer-Agribusiness and Innovation Platform, International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), Patancheru, India, Member

Dr Mruthyunjaya, Retired National Director, NAIP, ICAR, New Delhi, Member

Dr Kalpana Sastry, Head (RSM), NAARM, Member-Secretary.

The first meeting was held from 23 to 24 Jul 2012 in NAARM, Hyderabad. Dr Kusumakar Sharma, ADG (Education), ICAR was a special invitee. The objective of meeting was to prepare a work plan of review, consultations and visits to be undertaken by the team in the stipulated time frame set for the committee. After intensive interactions with scientists, administrative and technical cadre, the team finalized the plan of action. Four mini task committees with an objective to review the identified area/division through one-to-one meetings or perusal of relevant documents were formulated. The QRT decided to hold consultations at NAARM and across Stakeholders. The Task Force Meetings were held at NAARM from 6 to 8 Sep 2012. The first Stakeholders' Consultation Meeting at New Delhi from 8 to 9 Oct 2012, the second Stakeholders' Consultation Meeting at Mumbai on 18 Oct 2012, and the third Stakeholders' Consultation Meeting at Hyderabad on 15 Nov 2012. The discussions on the Final Report-Presentation of task force reports and development of recommendations were held at NAARM from 17 to 18 Nov 2012. The QRT presented the findings of report to the NAARM Institute Management Committee on 21 Dec 2012. The inputs of these deliberations were incorporated in the final report. The Final Report was submitted by the Chairman to the Director-General, ICAR, and Secretary, DARE, New Delhi on 2 Jan 2013.

Research Advisory Committee Meeting

The 13th Meeting of the Research Advisory Committee (RAC) of NAARM under the Chairmanship of Prof. V.S. Vyas was held on 30 Aug 2012. The other Members who participated were Dr P.G. Chengappa, Dr Dinesh K. Marothia and Shri G.V. Ramana Reddy. Dr Ramesh Chand, Director, NCAP, New Delhi was a special in-

The 6th QRT team for NAARM reviewed the activities and progress of work from 2006 to Mar 2012.
Left: Dr K.V. Raman (fourth from left) chairs the meeting of the QRT.
Right: Dr K.V. Raman (third from right) with other QRT members interacts with the faculty at NAARM.

M. Ravi

M. Ravi

Prof V.S. Vyas (fourth from left) chairs the 13th Meeting of the RAC of NAARM along with other Members on 30 Aug 2012.

vitee. Dr S. Kalpana Sastry was the Member-Secretary. Dr S.L. Goswami, Director, NAARM, presented the progress at NAARM since the last meeting. Based on the progress the RAC committee gave the following recommendations: Capacity building programmes for University faculty and staff of KVKs may be initiated, efforts to enhance agricultural education process in NARS may be made, a half-day workshop on researchable areas for NARS may be planned, impact of NAARM training programmes may be studied beyond the programme and at the respective institutes of the participants, appropriate dissemination strategies through publications, more specifically working papers and policy papers may be planned and collaboration with the national organizations in the NARS and Non-NARS, and international organizations may be explored.

Institute Management Committee

48th IMC Meeting

The 48th meeting was held on 30 Jul 2012 under the Chairmanship of Dr S.L. Goswami, Director, NAARM. The Members present were Drs V.K. Gupta, National Professor, IASRI, New Delhi, Malavika Dadlani, Joint Director (Research), IARI, New Delhi, Kusumakar Sharma, ADG (HRD), ICAR, New Delhi, Shri G.V. Ramana Reddy, Horticulture Farmer, Nalgonda, J. Devi Prasad, Joint Director (Agriculture), Representative of Director (Agriculture), Government of Andhra Pradesh and Shri S.K.C. Bose, Senior Finance and Accounts Officer, CRIDA, Hyderabad. Shri Sanjay Kant was the Member-Secretary. The special invitees from NAARM were Drs N.H. Rao, P. Manimandan, Kalpana Sastry, S.K. Soam, K.M. Reddy, N. Sandhya Shenoy, G.P. Reddy, Shri Z.H. Khilji, A. Dhandapani, and K. Srinivas. The IMC was appraised of the progress in research activities during 2011–12, training programmes conducted from 1 Sep 2011 to 30 Jun 2012 and proposed training programmes from 1 Jul 2012 to 31 Mar 2013, a report on PG education programmes, XII Plan initiatives, Constitution of QRT, progress of infrastructure works and the status of spill over of equipment of XI Plan to XII Plan.

49th IMC

The meeting was convened on 21 Dec 2012 for the presentation of the QRT report by the Chairman, 6th QRT. Dr K.V. Raman, Chair, V-QRT, NAARM, presented the findings of the QRT. These were deliberated and suggestions were incorporated in the QRT final report.

Academic Committee

Four meetings of the Academic Committee were held on 26 Apr 2012 (86th), 15 Sep 2012 (87th), 20 Oct 2012 (88th), and 22 Dec 2012 (89th) under the Chairmanship of Dr S.L. Goswami, Director, NAARM. Dr S.K. Nanda was the Member-Secretary. Various issues related to capacity building, administrative and financial matters were discussed and finalised.

Institute Research Council

14th IRC Meeting

The meeting was held from 13 to 15 Mar 2013 under the Chairmanship of Dr S.L. Goswami, Director, NAARM. The achievements in the completed projects and the progress in the ongoing projects were discussed along with new research project proposals. Dr Kalpana Sastry, Member-Secretary presented the action taken report.

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

NAARM Participates in AP-TEC 2012 @ Guntur

NAARM partnered with the Andhra Pradesh Technology Development Corporation (APTEC) as a knowledge partner for the AP-TEC 2012 @ Guntur from 6 to 8 Dec 2012. The focal theme of the conference was "Technologies for Modern Agriculture." The objective was to expose the farmers and the State Department Officials to modern agricultural technologies. Shri Dokka Manikya Vara Prasada Rao, Hon'ble Minister of Rural Development and National Rural Employment Guarantee Scheme, Andhra Pradesh inaugurated the conference-cum-exhibition. Dr S.L. Goswami, Director, NAARM gave a key note address titled "Status of Indian Agriculture – Scope for Andhra Pradesh." Drs K. Kareemulla spoke on "Status of Pulses Cultivation in Andhra Pradesh" and Dr P. Ramesh on "Organic Farming." NAARM also put up a stall in the exhibition.

S.L. Goswami Participated in Side Event at COP-11

Dr S.L. Goswami, Director, NAARM participated in a side event "Caravans of Biodiversity: India's Livestock Keepers, their Breeds and Products" during the Conference of the Parties to the Convention on Biological Diversity at Hyderabad on 12 Oct 2012. Dr Ela Martyniuk, National Coordinator of Animal Genetic Resources, Poland co-chaired the event. The event was organized by the League for Pastoral Peoples and Endogenous Livestock Development. There were presentations on "Innovate Orissa initiative on Pigs," "The Protein Pot of the Poor," "Attapaddy Goat Production System," "Raika Biocultural Protocol," "Ark of Biodiversity Project," and "Access and Benefit-sharing of Animal Genetic Resources: How it could work for Livestock Keepers." Dr IlseKöehler-Rollefson from Germany, a Co-founder of League for Pastoral Peoples (LPP) and an active campaigner working for future of livestock keeping and survival of pastoralists and small-scale livestock keepers also participated in the event.

Courtesy: J.Raghavendra Rao

Dr S. L. Goswami (second from left), released a book in a side event "Caravans of Biodiversity: India's Livestock Keepers, their Breeds and Products" during the COP-11 at Hyderabad on 12 Oct 2012. Also seen from left are Drs Ela Martyniuk, Ilse Köhler-Rollefson and B. Sahu.

Dr M.L. Nityashree completed the attachment training at the International Food Policy Research Institute, New Delhi from 27 Jan to May 2012 as part of the requirement of FOCARS.

Dr S.L. Goswami attended the Selection-cum-Standing Committee of Emeritus Scientist under the Chairmanship of Dr. R.S. Paroda in ICAR, New Delhi, on 4 Apr 2012.

Dr S.L. Goswami, delivered a key note address at the AP-TEC 2012 @ Guntur from 6 to 8 Dec 2012.

Courtesy: CII-APTEC

Dr S.L. Goswami attended the meeting with Deputy Director-General (Education) at ICAR, New Delhi on 2 May 2012.

Dr S.L. Goswami attended the Subject Matter Divisions meeting with the Director-General, ICAR, New Delhi to discuss the XII Plan, works and equipment, and manpower status on 10 May 2012.

Dr K.M. Reddy attended the meeting of the Academic Council of the SVVU at Tirupati on 11 May 2012.

Dr P. Ramesh attended the Annual Workshop Meeting on Castor at Yercaud, Tamil Nadu, from 10 to 12 May 2012.

Dr S.L. Goswami attended the meeting with the Director-General, ICAR, New Delhi during the visit of the Delegation led by Prof. Issae. F. Adewale, Vice-Chancellor, University of Ibadan, Nigeria at ICAR Committee Room, Krishi Bhawan, New Delhi on 21 May 2012.

Dr S.L. Goswami attended the 12th Research Advisory Committee Meeting of the Project Directorate on Cattle, Meerut on 26 May 2012.

Dr S.L. Goswami attended the 5th Meeting of the Advisory Committee Technology Vision 2035–Food and Agriculture at TIFAC, New Delhi on 6 Jun 2012.

Dr G.P. Reddy participated in a project meeting of NICRA held at NCAP, New Delhi from 11 to 12 Jun 2012.

Dr S.K. Soam participated as an invited expert at the Inception Workshop of the UNEP/GEF supported Phase-II capacity building project on biosafety during 18-19 Jun 2012 at NASC Complex, New Delhi.

Dr K.M. Reddy attended the Consultative Meeting of the ICAR Committee for developing "Policy for Higher Agricultural Education in India" held at CIFE, Mumbai, on 25 Jun 2012.

Dr A. Debnath participated in the CME programme on "Recent Advances in Cardiology," at CARE Hospital, Hyderabad on 9 Jul 2012.

Dr P. Ramesh attended the International Workshop on "Innovative Teaching for Improved Learning" organized by the Agricultural Innovative Partnership (AIP) with USAID, Illinois and Cornell University, USA at Hotel Sheraton, New Delhi from 16 to 18 Jul 2012.

Dr A. Debnath attended the Complex Angioplasty and Chronic Total Occlusion Summit (CACTO 2012) in Apollo Hospital, Hyderabad from 21 to 22 Jul 2012.

Dr S.L. Goswami attended the Third National Conference on Agro-Informatics and Precision Agriculture 2012 at IIIT, Hyderabad as Honorary Chair on 1 Aug 2012.

Dr S.L. Goswami attended the Foundation Day celebrations of the Directorate of Oilseeds Research, Hyderabad on 1 Aug 2012.

Shri Sumanth Kumar attended the third National Conference on "Agro-Informatics and Precision Agriculture 2012" at IIIT, Hyderabad, from 1-3 Aug 2012, and spoke on "User Acceptance of Cloud-based Online Evaluation – A Case Study at NAARM."

Dr S.L. Goswami attended the Agribusiness Mela at ICRISAT, Patancheru on 2 Aug 2012.

Dr S.L. Goswami attended the inaugural programme of the TATA Institute of Social Sciences (TISS) at AMR-APARD, Hyderabad on 3 Aug 2012.

Dr S.L. Goswami was the Chief Guest at the Valedictory Function of the Summer School on "Gender Mainstreaming for Resilient Agriculture" organized by DRWA, Bhubaneswar on 7 Aug 2012.

Dr S.L. Goswami attended the First Meeting of the Committee to Review Revised Score Card at the ASRB, New Delhi on 13 Aug 2012.

Dr S.L. Goswami attended the "Knowledge Meet" called by the Director-General, ICAR at NASC Complex, New Delhi on 21 and 22 Aug 2012.

Dr S.L. Goswami attended the 2nd Meeting of the Committee appointed to review the revised score card at ASRB, New Delhi on 23 Aug 2012.

Dr A. Debnath attended the American Oncology Cancer Congress at the Citizen Hospital, Hyderabad on 26 Aug 2012.

Dr S.L. Goswami attended the two day workshop on "National Training Policy" at ISTM, New Delhi from 27 to 28 Aug 2012.

Dr D. Rama Rao was a guest faculty for training on "Project Formulation, Risk Assessment, Scientific Report Writing and Presentation" at the Indian Agricultural Research Institute, ICAR, New Delhi from 27 to 28 Aug 2012.

Dr Kalpana Sastry gave an invited lecture on "Economic Prospects of Agri-nanotechnologies" in the CAFT Training programme on "Agric Research Planning and Impact Assessment," in the Division of Agricultural Economics, IARI, New Delhi on 31 Aug 2012.

Shri Sumanth Kumar attended the "A-View Hands-on Workshop" on 4 Sep 2012 at JNTU, Hyderabad.

Dr S.L. Goswami attended a meeting called by the Director-General, ICAR to discuss the Plan of NAARM for 2012–13 at ICAR, New Delhi on 7 Sep 2012.

Dr S.L. Goswami attended the Programme of the International Rice Research Institute (IRRI) at Hotel Taj Krishna, Hyderabad on 10 Sep 2012.

Dr S.L. Goswami attended the programme of CRIDA at their Research Farm, Gunegal, Hyderabad during the visit of the Hon'ble Union Minister of Agriculture, Shri Sharad Pawar on 10 Sep 2012.

Shri Sumanth Kumar as a Nodal Officer attended a workshop on "Data Digitization Activity under MIS/FMS Project "at IASRI, New Delhi on 12 Sep 2012.

Dr S.L. Goswami attended the function organized by the Agri-Biotech Foundation for the third anniversary of Dr Norman E. Borlaug, in ANGRAU Campus, Hyderabad on 12 Sep 2012.

Dr S.K. Soam participated as an invited expert in the Asian regional workshop in preparation of COP-MOP 6, organized by the International Service for the Acquisition of Agribiotech Applications (ISAAA), IFPRI and ICRISAT jointly at ISTA Hotel, Hyderabad during 13-14 Sep 2012.

Dr S.L. Goswami was the Chief Guest for the Valedictory Function of the DST Training Programme "Crop – Weather Dynamics" at CRIDA, Hyderabad on 13 Sep 2012.

Dr S.L. Goswami was the Chief Guest in the closing ceremony of the Hindi Week at the Project Directorate on Poultry, Hyderabad on 14 Sep 2012.

Shri Sumanth Kumar gave a presentation on "Implementing Citrus Germplasm Warehouse using Cloud Framework" at the International Conference on Agricultural and Horticultural Sciences on 14 Sep 2012 at the Hyderabad International Convention Centre, Hyderabad.

Dr S.L. Goswami attended the launch of the IKSL Mobile Tele-Network for Spices Farmers of Andhra Pradesh by the Spice Board India, Kochi held in Jubilee Hall, Public Gardens, Hyderabad on 14 Sep 2012.

Dr P. Ramesh attended the Institute Management Committee (IMC) of the Central Research Institute for Dryland Agriculture (CRIDA), ICAR, Hyderabad on 17 Sep 2012 as Member.

Dr Ranjit Kumar delivered a lecture on "Impact Assessment of Conservation Agriculture in India" during the model training course on conservation agriculture organized at the Indian Institute of Soil Science, Bhopal on 17 Sep 2012.

Dr S.L. Goswami attended the 30th Meeting of the Central Joint Staff Council (CJSC) New Delhi as Member, Official Side, CJSC at NASC Complex, on 18 Sep 2012. He was nominated by the Director-General, ICAR, New Delhi.

Dr D. Rama Rao attended a meeting of the "Core Group on State S&T Oriented Demonstration Projects" at the Indian Institute of Technology (IIT), Kharagpur, from 19 to 20 Sep 2012.

Dr S.L. Goswami attended the 27th Sardar Vallabhbhai Patel Memorial Lecture at the National Police Academy, Hyderabad on 21 Sep 2012.

Dr S.L. Goswami attended the Assessment Committee meeting at ASRB, New Delhi on 22 Sep 2012.

Drs S.L. Goswami, K. Srinivas, N. Sivaramane and Ranjit Kumar attended the launch meeting workshop

Dr S.L. Goswami (second from right) interacts during the launch meeting workshop of the NAARM-CIMMYT collaborative research programme on "Production and Investment Outlook of Maize for Regional Food Security in Asia" at Kathmandu, Nepal on 24 Sep 2012.

Courtesy: CIMMYT

of the NAARM-CIMMYT collaborative research programme on "Production and Investment Outlook of Maize for Regional Food Security in Asia" at Kathmandu, Nepal from 24 to 26 Sep 2012.

Dr P. Ramesh delivered a guest lecture on "Conservation Agriculture in Oilseed-based Cropping systems" in the ICAR sponsored training programme on "Conservation Agricultural Strategies for Resource Conservation and Mitigation of Climate Change" at CRIDA, Hyderabad on 29 Sep 2012.

Dr S.L. Goswami attended the inauguration of the refresher training programme on "Plant Biotechnology" at the Agri-Biotech Foundation, Hyderabad as Chief Guest on 1 Oct 2012.

Drs D. Babu and M.L. Nithyashree attended the MDP on "International Business" at the Indian Institute of Management, Ahmedabad from 1 to 6 Oct 2012.

Dr S.L. Goswami attended the meeting of the Committee appointed to review the revised score card of Scientist at ASRB, New Delhi on 5 Oct 2012.

Dr Rama Rao attended the NAIP Review Workshop of Component-1 sub-projects at New Delhi, on 5 Oct 2012.

Dr S.L. Goswami attended the special consultation meeting of the NAARM QRT at NASC Complex, New Delhi on 8 and 9 Oct 2012.

Drs Ranjit Kumar and K. Srinivas attended the National Conference of Agricultural Economics Research Association, during 9-11 Oct 2012, at IARI, New Delhi. Dr Ranjit Kumar presented a paper on 'Value Chain Analysis of Maize Seed Delivery System in Public and Private Sectors in Bihar.'

Dr S.L. Goswami attended the meeting of TIFAC at the Institute of Public Enterprises, Osmania University Campus, Hyderabad on 15 Oct 2012.

Dr P. Ramesh was the external examiner for qualifying (comprehensive) examination of M.Sc. (Agriculture-Agronomy), students of the Agricultural College, Naira, ANGRAU on 15 Oct 2012.

Dr S.L. Goswami attended the 244th Meeting of the Board of Management of the Acharya N.G. Ranga Agricultural University (ANGRAU) at Teacher's Home, Secunderabad on 16 Oct 2012.

Dr S.L. Goswami attended the Consultation Meeting of NAARM QRT at CIFE, Mumbai on 18 Oct 2012.

Dr S.L. Goswami was an honoured guest at the training programme in APARD, Hyderabad for Bharat Nirman Volunteers on 20 Oct 2012.

Drs D. Babu and Ranjit Kumar participated in the 26th Indian Society of Agricultural Marketing (ISAM) Conference organized by ISAM and Gokhale Institute of Politics and Economics (GIPE) at the Yashwant Rao Academy of Development Administration (YASHADA), Pune from 20 to 21 Oct 2012. Dr D. Babu presented a research paper on "Export Scenario and Market Identification Process of Agricultural Exports in India: A Case Study of Cashewnuts."

Dr N.H. Rao attended the Advisory Committee meeting for NFBSFARA on Decision Support System (DSS) projects at the Division of Post-Harvest Technology, IARI, New Delhi on 22 Oct 2012.

Dr Kalpana Sastry participated in the national workshop on "Indigenous Traditional Knowledge for Promotion of Sustainable Agriculture" organized by the Centre for Agrarian Studies and Disaster Mitigation from 29 to 31 Oct 2012.

Dr M. Balakrishnan attended the VForum-2012 workshop organized by Vmware groups at Grand Hyatt, Hotel, Mumbai from 30 to 31 Oct 2012.

Dr S.L. Goswami attended the 39th Foundation Day Celebrations of the Agricultural Scientists Recruitment Board, New Delhi on 1 Nov 2012.

Dr M. Balakrishnan attended the First Annual National Knowledge Network (NKN) workshop organized by NIC at IIT, Bombay on 1 Nov 2012.

Dr S.L. Goswami attended the 6th Meeting of the Advisory Committee of Technology Vision 2035 Sectorial Roadmap of Food and Agriculture of TIFAC at New Delhi on 5 Nov 2012.

Drs D. Babu, P.C. Meena and M.L. Nithyashree participated in the International Conference-cum-Exhibition on "Agribusiness and Food Processing – Seeding Success through Innovation and Technology (Food 360 degree)" at Hotel Taj Krishna, Hyderabad on 5 and 6 Nov 2012.

Drs B.S. Sontakki and R. Venkattakumar attended a

training programme on "Evaluating Training and Development" at the Indian Society of Training and Development (ISTD), New Delhi from 6 to 7 Nov 2012.

Dr S.L. Goswami attended the selection-cum-standing committee meeting for Emeritus Scientist at the Division of Agricultural Education ICAR, New Delhi on 8 Nov 2012.

Dr N.H. Rao attended the Expert Committee meeting for the DSS group of thrust areas of the NFBSFARA for evaluation of Concept Notes submitted for funding under the NFBSFARA in ICAR, New Delhi on 8 Nov 2012.

Drs K. Srinivas and Ranjit Kumar attended the National Conference of the Indian Society of Agricultural Economics, during 16-19 Nov 2012 at BHU, Varanasi. Dr Ranjit Kumar presented a paper on 'Enabling Efficient Supply Chain in Dairying using GIS: A Case of Private Dairy Industry in Andhra Pradesh State.'

Dr S.L. Goswami was the Chief Guest at the inaugural function of the ICAR sponsored short course on "Recent Development in Epigenetics, Structural and Functional Genomics for Animal Genetic Resource Conservation vis-à-vis Augmentation of Productivity in Poultry and Livestock Species" at the Project Directorate on Poultry, Hyderabad, on 17 Nov 2012.

Dr G.P. Reddy participated in the 72nd Annual Conference of the Indian Society of Agricultural Economics held at BHU, Varanasi from 17 to 19 Nov 2012.

Dr P. Ramesh participated in the Third International Agronomy Congress on "Agricultural Diversification, Climate Change Management and Livelihoods" at the IARI, New Delhi from 26 to 30 Nov 2012.

Dr S.L. Goswami had a discussion with the Financial Advisor, ICAR and Director (Finance), ICAR at ICAR, New Delhi on 27 Nov 2012.

Dr M. Balakrishnan attended the International Conference on "Plant Health Management for Food Security" at DRR, Hyderabad from 28 to 30 Nov 2012 and presented a paper "Phytopatho Information Systems for Determination of Plant Pathogenic Organism."

Dr N.H. Rao attended the Expert Committee meeting for the presentation and selection of proposals for funding under NFBSFARA, at ICAR, New Delhi on 3 Dec 2012.

Dr S.L. Goswami was the Guest of Honour at the inaugural function of the conference on "Commercial and Rural Poultry Production—Novel Concepts and Strategies to meet Growing Demands and Changing Consumer Needs" at the Project Directorate on Poultry, Hyderabad on 5 Dec 2012.

Dr S.L. Goswami delivered a keynote address at AP-TEC 2012 @ Guntur–a Conference and Exhibition at Lam Farm, Guntur on 6 Dec 2012.

Dr P. Ramesh delivered a guest lecture on "Organic Farming in India" in the AP-Tech 2012 Conference and Exhibition at Lam Farm, Guntur during 6 to 8 Dec 2012.

Dr Manoj P. Samuel attended the International Conference on "Creativity and Innovation at Grassroots-ICCIG" jointly organized by the National Innovation Foundation and Tianjin University, China at the IIM Ahmedabad from 7 to 8 Dec 2012.

Dr S.L. Goswami attended the "Sensitization Meeting of Scientist-in-Charges of PME Cells of ICAR" under the Chairmanship of Director-General, ICAR at NDRI, Karnal on 8 Dec 2012.

Dr S.L. Goswami attended the National Conference on "Ushering Second Green Revolution in Indian Agriculture through Public Private Partnership" at Vigyan Bhavan, New Delhi on 11 Dec 2012.

Dr S.K. Soam participated in the National Seminar of Plant Physiology on "Physiological and Molecular Approaches for Development of Climate Resilient Crops," from 12 to 14 Dec 2012, at ANGRAU, Hyderabad. A poster "Intellectual Property Protection of 'Banaganapalle Mango' of Andhra Pradesh, India through Registration as a Geographical Indication" was presented in collaboration with the Dr Y.S.R. Horticultural University, Andhra Pradesh Technology Development and Promotion Center (APTDC) and Institute of Biotechnology, ANGRAU.

Dr S.L. Goswami attended the 245th meeting of the Board of Management of ANGRAU at Teacher's Home, Hyderabad on 15 Dec 2012.

Dr N.H. Rao attended the 11th Consortium Implementation Committee (CIC) meeting and 5th Consortium

Advisory Committee (CAC) Meeting of NAIP (Component 4BSR) "Research into Decision Support Systems for Insect Pests of Major Rice and Cotton-based Cropping Systems" (C2046) at Central Research Institute for Dryland Agriculture, Hyderabad on 15 Dec 2012.

Dr S.L. Goswami was the Chief Guest at the Valedictory Function of the orientation programme at the Karnataka Veterinary Animal and Fisheries Sciences University, Bidar on 18 Dec 2012.

Dr M. Balakrishnan attended the International Conference on "Agricultural Statistics and Informatics" at IASRI, New Delhi from 18 to 20 Dec 2012 and presented a paper "Web-based Mango EST Information system of Andaman and Nicobar Islands."

Dr P.C. Meena attended a meeting in Planning Commission, New Delhi to discuss the evaluation study of MGNREGS in Gujarat and Maharashtra on 19 Dec 2012.

Dr K.M. Reddy attended the National Seminar-cum-Workshop on "ICT-based Learning in Higher Education: Prospects and Challenges" at the University of Hyderabad, Hyderabad, on 19 Dec 2012.

Dr S.L. Goswami attended the information retreat at the NDRI, Karnal to discuss India's Vision and Strategy for participation in International Agricultural Research – an informal brainstorming from 28 to 29 Dec 2012.

Dr S.L. Goswami attended the Special Meeting to discuss the 6th QRT of NAARM with the Director-General, ICAR at NASC, New Delhi on 2 Jan 2013.

Dr S.L. Goswami attended the 7th Meeting of TV2035 Advisory Committee Meeting on Food and Agriculture at TIFAC, New Delhi on 11 Jan 2013.

Dr Rama Rao attended a meeting on "IT in Agriculture," organized by DKMA and Media Lab Asia at NASC, New Delhi, on 15 Jan 2013.

Dr S.L. Goswami attended the Meeting of RFD 2013-14 of Agricultural Education in Respect of Responsibility Sub-Centres (RSC) at the Division of Education, ICAR, New Delhi on 18 Jan 2013.

Drs Manoj Samuel and M. Balakrishnan attended the National Symposium on "Climate Change and Indian Agriculture: Slicing down the Uncertainties," at CRIDA, Hyderabad from 22 to 23 Jan 2013.

Dr S.L. Goswami was the Chief Guest for the inaugural function of the off-campus "Orientation Programme for the Newly Recruited Faculty of the Indira Gandhi Krishi Viswavidyalaya," in Raipur on 23 Jan 2013.

Dr Kalpana Sastry participated in the Workshop on "Science, Technology and Innovation in India: Access, Equity and Inclusion, at the IIC, New Delhi on 28 Jan 2013.

Dr Manoj Samuel attended the 47th Annual Convention of the Indian Society of Agricultural Engineers and the International Symposium on "Bio-Energy – Challenges and Opportunities," at the Directorate of Rice Research, Hyderabad from 28 to 30 Jan 2013.

Dr D. Babu attended the Management Development Programme on "Managing Contract Farming" at the Indian Institute of Management, Ahmedabad from 28 Jan to 1 Feb 2013.

Drs K.H. Rao and P. Ramesh participated in the DST sponsored training programme on "Emotional Intelligence at Workplace for Middle-level Scientists" at the Centre for Organization Development, Hyderabad from 4 to 8 Feb 2013.

Dr S.L. Goswami attended the 11th Agricultural Science Congress at the Orissa University of Agriculture and Technology, Bhubaneswar from 7 to 9 Feb 2013.

Dr S.L. Goswami was the guest speaker at the National Seminar on "Agribusiness Potential of Odisha" at the P.G. Council Conference of Utkal University, Bhubaneswar on 9 Feb 2013.

Drs M. Balakrishnan and P.C. Meena attended the MDP on "Food Supply Chain Management" at the IIM, Ahmedabad from 10 to 17 Feb 2013.

Dr S.L. Goswami was the Chief Guest for the inaugural function of "Science Conclave" of Guru Nanak Girls College, Santpura, Yamuna Nagar on 15 Feb 2013.

Dr S.L. Goswami attended the Consortium Advisory Committee Meeting of the Project "Identification of Quantitative Trait Loci for Milk Yield Fat and Protein Percentage in Buffaloes" at the National Bureau of Animal Genetics Resources (NBAGR), Karnal, on 16 Feb 2013.

Dr S.L. Goswami attended the Annual General Meeting (AGM) of the ICAR in New Delhi on 18 Feb 2013.

Dr S.L. Goswami attended the 8th Meeting of the TV2035 Advisory Committee Meeting on Food and Agriculture at TIFAC, New Delhi on 19 Feb 2013.

Dr S.L. Goswami attended the Vice-Chancellors' Conference at NASC Complex, New Delhi from 19 to 21 Feb 2013.

Dr B.S. Sontakki attended a brainstorming workshop on "Methodologies for Assessing the Impact of International Training under NAIP," organized by NAIP and IFPRI India Office at NASC, New Delhi on 21 Feb 2013.

Dr R. Venkattakumar participated in the brainstorming workshop on "Methodologies to Assess Impact of Capacity Building under NAIP" on 21 Feb 2013 jointly organized by NAIP-IFPRI in New Delhi.

Dr S.L. Goswami attended the meeting on 'Cadre Strength' in the Division of Education, ICAR, New Delhi on 21 Feb 2013.

Drs M. Balakrishnan and P.C. Meena attended the national workshop on "Foresight and Future Pathways of Agricultural Research through Involvement of Youth in India" organized by the Indian Council of Agricultural Research (ICAR), in association with the Asia-Pacific Association of Agricultural Research Institutions (APAARI) and the Trust for Advancement of Agricultural Sciences (TAAS) at the NASC Complex, New Delhi from 1 to 2 Mar 2013.

Dr S.L. Goswami attended the Senior Officers' Committee Meeting of ICAR held at NASC Complex, New Delhi on 7 Mar 2013.

Dr S.L. Goswami was the Chief Guest at the Valediction function of the XIV All-India Inter-Agricultural University Sports and Games Meet of the Karnataka Veterinary, Animal and Fisheries Sciences University, Bidar, on 9 Mar 2013.

Dr Kalpana Sastry gave a special lecture on "Genetically Modified Crops and Food Security" as a part of National Science Day Celebrations at the International Advanced Research Centre for Powder Metallurgy and New Materials on 11 Mar 2013, Hyderabad.

Dr S.L. Goswami attended the Meeting of Head of Divisions and Directors of Institute with the Secretary, DARE and Director-General, ICAR at New Delhi on 17 Mar 2013.

Dr S.L. Goswami attended the ICAR Directors' Conference–Vision 2050 at NASC Complex, New Delhi from 19 Mar 2013. He gave a talk on the "Training Policy in ICAR."

Drs K. Srinivas and Ranjit Kumar attended the 'India Maize Summit 13' organized by NCDEX and FICCI at FICCI, New Delhi from 21 to 22 Mar 2013.

Wokshops, Symposia, Seminars Organized

M. Ravi

Seen on the dais are the dignitaries at the inaugural session of the XXI Regional Committee Meeting of ICAR Zone-II on 19 Jul 2012.

ICAR Regional Committee Meeting held

Shri E.S.L. Narasimhan, His Excellency, Governor of Andhra Pradesh inaugurated the XXI Regional Committee Meeting of the ICAR Zone-II at NAARM, Hyderabad on 19 Jul 2012. Dr S. Ayyappan, Secretary, Department of Agricultural Research and Education (DARE) and Director-General, ICAR chaired the two-day deliberations that included 100 participants from Zone-II comprising of Andhra Pradesh, Orissa, West Bengal and the Andaman and Nicobar Group of Islands. They were from the institutes of the ICAR, SAUs, development departments, NGOs, farming community, farmers' associations and private industry. The deliberations pertained to research, extension and research-extension-farmer-market linkages.

M. Ravi

Shri E.S.L. Narasimhan (right) and Dr S. Ayyappan (left) keenly follow the proceedings in the XXI Regional Committee Meeting of ICAR Zone-II on 19 Jul 2012.

NAARM-CIMMYT Project Launched

"Assessments of the Maize Situation, Outlook and Investment Opportunities to Ensure Food Security in Asia" is the maize project of the CGIAR Research Programme jointly funded by the International Maize and Wheat Improvement Center (CIMMYT), Mexico and International Institute of Tropical Agriculture (IITA), Nigeria that was launched on 24 Sep 2012 in Kathmandu, Nepal. The NAARM is the lead centre with partner countries Bangladesh, China, Indonesia, Nepal and Pakistan. The meeting held from 24 to 26 Sep 2012 discussed the work plan that included understanding the current evolution of maize and how it was likely to evolve in the near future in major Asian nations, prioritize further research and development in maize, and to identify eventual gaps and unknowns in the value chain of maize sector. The meeting was chaired by Dr S.L. Goswami, Director, NAARM. Participants were Drs Bober Christian, Maize-CRP Representative, CIMMYT, New Delhi, M.A. Monayem Miah, BARI, Bangladesh, Hassnain Shah, PARC, Pakistan, Devendra Gauchan, NARC, Nepal, Hadijah A. Dahlan, ICRI, Indonesia, and Ranjit Kumar, K. Srinivas, and N. Sivaramane, from NAARM, Hyderabad. Dr Huanguang Qiu, Country Partner, CCAP, China made an online presentation during the meeting.

Round Table Discussion on OER

"Prospects and Strategies for OER and Creative Com-

mons in SAARC Countries," was the round table discussion held at NAARM on 27 Feb 2013. Twentyeight Directors, Head of Divisions and Principal Scientists, from Hyderabad research institutes participated in the discussion, Dr Catherine Casserly, CEO, Creative Commons, USA was the lead speaker. Dr S.L. Goswami, Director, NAARM opened the discussion with the note of wider perspectives of OERs. Dr N.H. Rao, Joint Director, NAARM shared the efforts of the Academy in the area of OERs. Dr N.T. Yaduraju, Principal Scientist, ICT4D, Knowledge Sharing and Innovation, ICRISAT presented the overview of OERs in Indian agriculture. Dr Casserly detailed the practice of creative commons, its scope and utility in terms of SAARC countries.

NAARM Foundation Day Celebrated

Dr V.N. Rai, IPS, Director, Sardar Vallabhbhai Patel National Police Academy, Hyderabad was the Chief Guest at the 37th Foundation Day of NAARM on 1 Sep 2012. Dr. S.L. Goswami, Director, NAARM presided over the function and spoke on the changes in NAARM during the past year. Dr N.H. Rao, Joint Director, NAARM welcomed the gathering. The Chief Guest gave away the Academy awards to its personnel:


M. Ravi

Dr V.N. Rai, IPS, Director, Sardar Vallabhbhai Patel National Police Academy, Hyderabad, addressed the gathering during the 37th Foundation Day of NAARM on 1 Sep 2012.

Best Worker Award

Technical: Shri B.K. Venkatram
Administrative: N. Vijayalakshmi
Supporting: Shri S. Swamy
T.S. Worker: Smt P. Amrutha and K. Anjaiah

After the inaugural session of the launch workshop of the "Assessments of the Maize Situation, Outlook and Investment Opportunities to Ensure Food Security in Asia" the participants get together for a photograph.
From left: Drs K. Srinivas, Devendra Gauchan, N. Sivaramane, M.A. Monayem Miah, Ranjit Kumar, S.L. Goswami, Boeber Christian, Hadihajh A. Dahlan, Hassnain Shah and K.B. Koirala.

Courtesy: CIMMYT

Hindi Fortnight Celebrated

Hindi fortnight was celebrated in NAARM from 1 to 14 Sep 2012. Competitions such as essay writing, 'Just a Minute,' General Knowledge,' 'Elocution,' 'Noting and drafting,' 'Making Words,' 'Singing,' 'Poetry Recitation,' and 'Typing' were conduction. For the PGDMA students, special competitions such as 'Singing,' and 'Marketing Skills,' were organized.

Dr Shubhada Vanjape, Professor and Chair (Academic Board), Osmania University was the Chief Guest at the Valedictory function on 14 Sep 2012. She spoke on the spread of Hindi that is now considered as a global language. Dr S.L. Goswami mentioned the use of Hindi in NAARM.

M. Ravi

Dr Shubhada Vanjape mentioned about the widespread use of Hindi in her address.

M. Ravi

Smt Rukmani Ammal (right) receives one of her five prizes from Dr Shubhada Vanjape (second from left) as Dr S.L. Goswami (left) appreciates.

Competitions

Essay

First prize: Dr P. C. Meena; *Second prize:* Shri Z. H. Khilji; *Third prize:* Shri N. Raghunath.

Just a Minute

First prize: Dr K. Srinivas; *Second prize:* Smt Y. Anuradha; *Third prize:* Drs K. Kareemulla, P.C. Meena, Ranjit Kumar, Shri Z.H. Khilji and Smt Rukmani Ammal.

General Knowledge

First prize: Smt N. Vijayalakshmi; *Second prize:* Dr D. Babu; *Third prize:* Shri Z. H. Khilji.

Elocution

First prize: Shri Z. H. Khilji; *Second prize:* Dr P.C. Meena; *Third prize:* Smt Rukmani Ammal.

Noting and Drafting

First prize: Shri Z.H. Khilji; *Second prize:* Smt Rukmani Ammal; *Third prize:* Shri N. Raghunath and Shri T. V. Ramadas.

Making Words

First prize: Dr A. Debnath; *Second prize:* Shri Z.H. Khilji; *Third prize:* Smt N. Vijayalakshmi and Shri T.V. Ramadas.

Singing

First prize: Shri C. Julius Samuel; *Second prize:* Shri Sanjay Kant; *Third prize:* Dr M.L. Nithyashree.

Poetry

First prize: Smt Rukmani Ammal; *Second prize:* Shri N. Raghunath and Dr K. Kareemulla; *Third prize:* Dr A. Debnath.

Typing

First prize: Shri N. Raghunath; *Second prize:* Smt Rukmani Ammal; *Third prize:* Shri T.V. Ramadas.

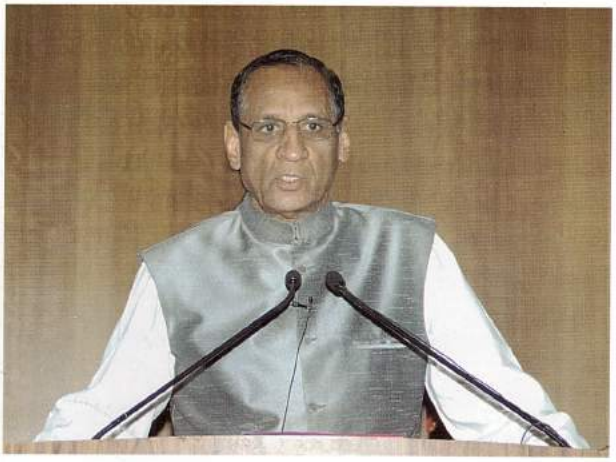
First Alumni Meet of NAARM-PG Held

The first meeting of the NAARM-PG Alumni Association was held at NAARM on 1 Oct 2012. Thirtyfive past students of the PGD-IPTMA, PGD-ITMA and PGDMA working in different parts of India participated in the meet. They shared their experience after leaving NAARM. Dr S.L. Goswami, Director NAARM and Chief Patron of the Association addressed the alumni. Dr N.H. Rao, Joint Director and Dean, NAARM who is also the Patron of the Alumni Association spoke on the changes in the educational programmes at NAARM.

Past students get together for the first alumni meet of NAARM-PG.

M. Ravi

Distinguished Visitors



Shri E.S.L. Narasimhan, addressed the XXI Regional Committee Meeting of the ICAR Zone-II on 19 Jul 2012.

M. Ravi

Dr S. Ayyappan gave an overview of the XXI Regional Committee Meeting of the ICAR Zone-II on 19 Jul 2012.

SHRI E.S.L. Narasimhan, His Excellency, Governor of Andhra Pradesh was the Chief Guest at the XXI Regional Committee Meeting of the ICAR Zone-II at NAARM, Hyderabad on 19 Jul 2012.

Dr S. Ayyappan, Secretary, Department of Agricultural Research and Education (DARE) and Director-General, ICAR visited NAARM on 20 Apr 2012 and 19 Jul 2012.

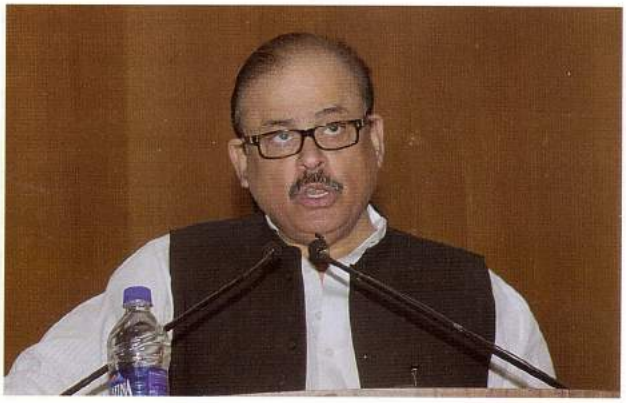
M. Ravi

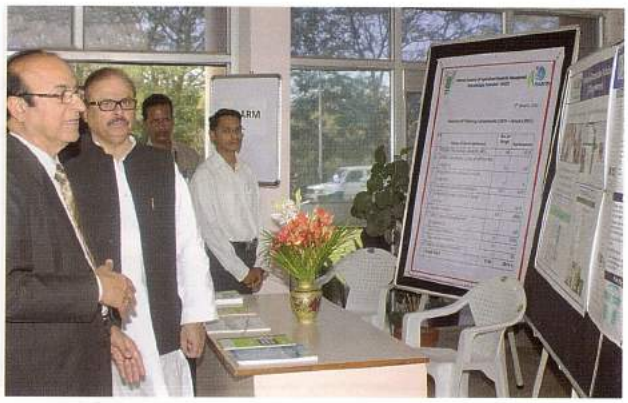
Dr V.N. Rai was the Chief Guest at the 37th Foundation Day of NAARM on 1 Sep 2012. He gave away the best worker awards.

Dr V.N. Rai, IPS, Director, Sardar Vallabhbhai Patel National Police Academy, Hyderabad was the Chief Guest at the 37th Foundation Day of NAARM on 1 Sep 2012.

Shri Tariq Anwar, Hon'ble Union Minister of State for Agriculture and Food Processing Industries, Government of India, visited NAARM on 7 Jan 2013.

Shri Tariq Anwar addressed the staff during his visit and also visited the mini-exhibition. He is seen at the exhibits of NAARM (right).



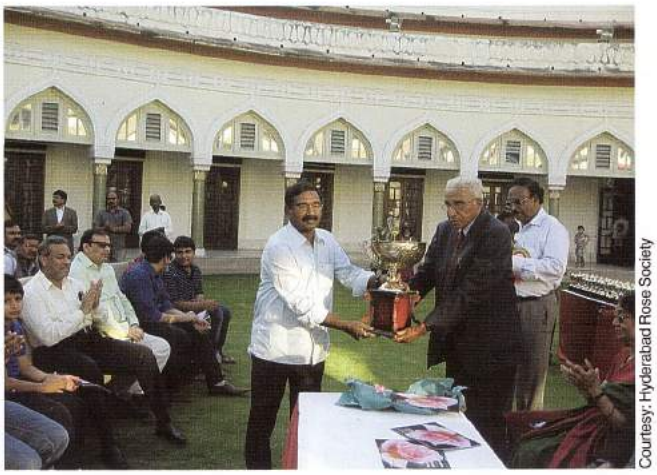


Awards/Recognition

M. Ravi

NAARM Wins Trophies in Hyderabad Rose Shows

NAARM won nine first prizes and 10 second prizes in the XXXVI Annual Rose Show conducted by the Hyderabad Rose Society at Public Gardens on 9 Dec 2012. These were: Hotel Sarovar Challenge Cup for the "Rosarian Institution" of the year for the institution getting highest aggregate points in Section I and II; Deccan Chronicle Challenge Silver Cup for the Institution getting highest aggregate points in Section II; Shri T. Chandrasekhar Reddy Memorial Challenge Silver Trophy for the "Best of Yellow Roses" for the individual or institution who gets highest aggregate points in classes 3, 14, 18, 30 and 34 (Yellow Roses); C.S. Hemanth Memorial Silver Trophy "Prince of the Show" for the best bloom among Roses in class 44 (Indian Roses); Coromandal Rolling Trophy for the "Best Fragrant Rose" of the show; and the Hyderabad Rose Society Trophy for the "Best Institutional Rose Garden."



Courtesy: Hyderabad Rose Society

Dr V. Murali (left) receives one of the trophies from the Chairman, Hyderabad Rose Society in Public Gardens, Hyderabad on 9 Dec 2012.

In the Annual Rose Show conducted by the Horticultural Society, Secunderabad on 16 Dec 2012, NAARM won six first prize trophies and 12 second prizes trophies. These were for Best Red Rose; Best collection of Polyantha Roses; Second Best Institutional Garden; Second highest aggregate points in the show; and Best display of Roses.

Courtesy: M.K. Samson

Dr Gurbachan Singh, Chairman, ASRB, New Delhi (third from left) hands over one of the prizes to Smt Rukmini Ammal in the ICAR Inter-Zonal Sports Meet 2012 at the IARI, New Delhi on 21 Jan 2013.

NAARM Wins Prizes in ICAR Sports Meet

ICAR Inter-Zonal Sports Meet 2012

NAARM participated in the ICAR Inter-Zonal Sports Meet 2012 at the Indian Agricultural Research Institute, New Delhi from 18 to 21 Jan 2013. Smt Rukmini Ammal got the first prize in 'discus,' and the second prize in 'shotput.'

ICAR South Zone Sports Meet 2013

In the ICAR South Zone Sports Meet 2013 held at the Sugarcane Breeding Institute, Coimbatore from 18 to 22 Feb 2013, the NAARM men's team won the first prize in the table tennis event. The team comprised of Shri Sham Bahadur, Shri P. Swamy, Shri P.B. Yadaiah, Shri P.G. Kohad and Dr V. Murali. In individual events, Smt Rukmini Ammal stood first in 'shotput,' 'discus,' 'carrom' and 'shuttle badminton (singles).' Shri M.K. Samson was first in 'shotput,' 'discus,' and second in 'javelin.' In the shuttle badminton (doubles) Smt Rukmini Ammal and Dr M.L. Nithyashree won the first prize.

N. Prabhakar

Smt Rukmini Ammal (top) receives her prizes from Smt E.S. Uma, IPS.
Shri M.K. Samson (below) receives his prizes.

N. Prabhakar

Smt E.S. Uma, IPS hands over the first prize to the NAARM shuttle badminton (doubles) team (left) and the shield to the NAARM men's table tennis team (right).

N. Prabhakar

N. Prabhakar

Personnel

Staff Strength as on 31 March 2013

Category	Sanctioned	Filled	Vacant
Scientist	60	29	33
Technical	47	41	6
Administrative	50	40	14
Supporting	39	35	4
Sub-total	196	145	57
RMP	2	2	0
Total	198	147	57

S.L Goswami ..... Director

N.H. Rao ..... Joint Director

Human Resources Management

P. Manikandan ..... Principal Scientist and Head

M.M. Anwer ..... Principal Scientist

R.V.S. Rao ..... Principal Scientist

K.H. Rao ..... Principal Scientist

P. Vijender Reddy ..... Technical Officer

N.R. Nageswara Rao ..... Technical Officer

Research Systems Management

R. Kalpana Sastry ..... Principal Scientist and ..... Head

S.K. Nanda ..... Principal Scientist

K. Kareemullah ..... Principal Scientist

K. Srinivas ..... Principal Scientist

Manoj P. Samuel ..... Senior Scientist

Jyothi Badri ..... Scientist (till 15 May 2012)

D. Babu ..... Scientist

Information and Communication Management

S.K. Soam ..... Principal Scientist and Head

A. Dhandapani ..... Principal Scientist

G.R.K. Murthy ..... Senior Scientist

M. Balakrishnan ..... Senior Scientist (from 9 Jul 2012)

P.D. Sreekanth ..... Senior Scientist

Ananta Sarkar ..... Scientist (till 26 Apr 2012)

K.V. Kumar ..... Technical Officer

Agribusiness Management

G.P. Reddy ..... Principal Scientist and Head (I/c)

Ranjit Kumar ..... Senior Scientist

N. Sivaramane ..... Senior Scientist

P.C. Meena ..... Scientist

M.L. Nithyashree ..... Scientist

Education Systems Management

K.M. Reddy ..... Principal Scientist and Head (I/c)

D. Rama Rao ..... Principal Scientist (till 2 Feb 2013)

P. Ramesh ..... Principal Scientist (from 13 Jun 2012)

V.V. Sumanth Kumar ..... Scientist (till 21 Jan 2013)

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

Publications

Ravi Viswanathan ..... Editor-cum-Information Officer (from 19 Oct 2012)

G. Aneeja ..... Technical Officer

Video Lab

Ch. Janardhan Rao ..... Technical Officer

Art Lab

P. Namdev ..... Technical Officer

Photo Lab

M. Ravi ..... Technical Officer

Press

M. Shekhar Reddy ..... Technical Officer

Health Centre

A. Debnath ..... Medical Officer

PG Studies Cell

Ahire Laxman ..... Technical Officer

Official Language Cell

J. Renuka ..... Assistant Director (OL)

Farm Unit

V. Murali ..... Farm Superintendent

M.A. Basith ..... Technical Officer

Civil Maintenance Unit

Sohail Ahmed Khan ..... Technical Officer

Hostel Services

Zameer Ahmed ..... Technical Officer and Manager (Hostel Services)

Sham Bahadur ..... Technical Officer

Administration and Finance

Sanjay Kant ..... Joint Director (Administration) and Registrar

Zakir H. Khilji ..... Finance and Accounts Officer

Projects and Financial Resources

Programme Directors of CBP at NAARM for 2012–13.	
Foundation Courses	R.V.S. Rao, R. Kalpana Sastry, G.R.K. Murthy, S.K. Soam, Manoj. P. Samuel
Leadership Programmes	P. Manikandan, G.P. Reddy, N.H. Rao, S.K. Soam, M.M. Anwer, R.V.S. Rao, R. Kalpana Sastry, D. Rama Rao,
Refresher Courses	K.H. Rao, Ranjit Kumar, K.M. Reddy, R. Venkattakumar, S.K. Nanda
Management Development Programmes/ Faculty Development Programmes	P.C. Meena, Sumanth Kumar, P.D. Sreekanth, K. Kareemulla, K. Srinivas, K.M. Reddy, V.K.J. Rao, G.R.K. Murthy, R. Kalpana Sastry, N. Sandhya Shenoy, V.K.J. Rao, A. Dhandapani, R. Venkattakumar, B.S. Sontakki, N. Sivaramane, M. Balakrishnan
Workshops	D. Rama Rao, B.S. Sontakki, A. Dhandapani, R. Venkattakumar, D. Babu, K.M. Reddy, G.P. Reddy, D. Rama Rao, S.K. Soam, N. Sandhya Shenoy, Ranjit Kumar, M.L. Nityashree, S.K. Nanda, K. Srinivas, A. Debnath, P. Ramesh, P.D. Sreekanth, M. Balakrishnan, Manoj P. Samuel, R. Kalpana Sastry
Sponsored Programme (Off-campus Programmes)	D. Rama Rao, P. Manikandan, M.M. Anwer, R.V.S. Rao, K.H. Rao, K.M. Reddy, G.R.K. Murthy, A. Dhandapani, N. Sivaramane, P.D. Sreekanth

Externally-aided Projects

Project Code	Title of the Project	Principal Investigator	Source of Funding
57	Learning and Capacity Building (L&CB) Project	N.H. Rao	NAIP
65	Strengthening Statistical Computing for NARS	A. Dhandapani	NAIP
67	IP Management and Transfer/Commercialization of Agricultural Technology Scheme	R. Kalpana Sastry	ICAR
74	Enhancing Resilience of Agriculture to Climate Change Role of Technologies Institutions And Policies	G.P Reddy	ICAR
87	Assessments of the Maize Situation, Outlook and Investment Opportunities to Ensure Food Security in Asia	Ranjit Kumar	CIMMYT
76	Analysis of Emerging Institutional Arrangements for Providing Broad-based Services to Farming Community-agri-clinics and Agri-business Centres (ACABC)	R. Venkattakumar	ICSS

Financial Statement for 2012-13 (Indian ₹ in lakhs)(As on 31 Mar 2013)

Head of Account	Plan		Non-Plan	
	Allocation	Expenditure	Allocation	Expenditure
Estt. Charges (including wages)	112.00	112.00	1,223.89	1,223.89
TA (including HRD)	35.00	34.95	14.65	14.60
Other Charges (including I.T.)	768.00	768.03	484.38	483.64
Works (Major/R&M)	335.00	335.00	3.54	3.54
Total	1,250.00	1,249.98	1,726.46	1,725.67
Revenue Generated	Target	Generation		
	161.77	266.23		

Acronyms

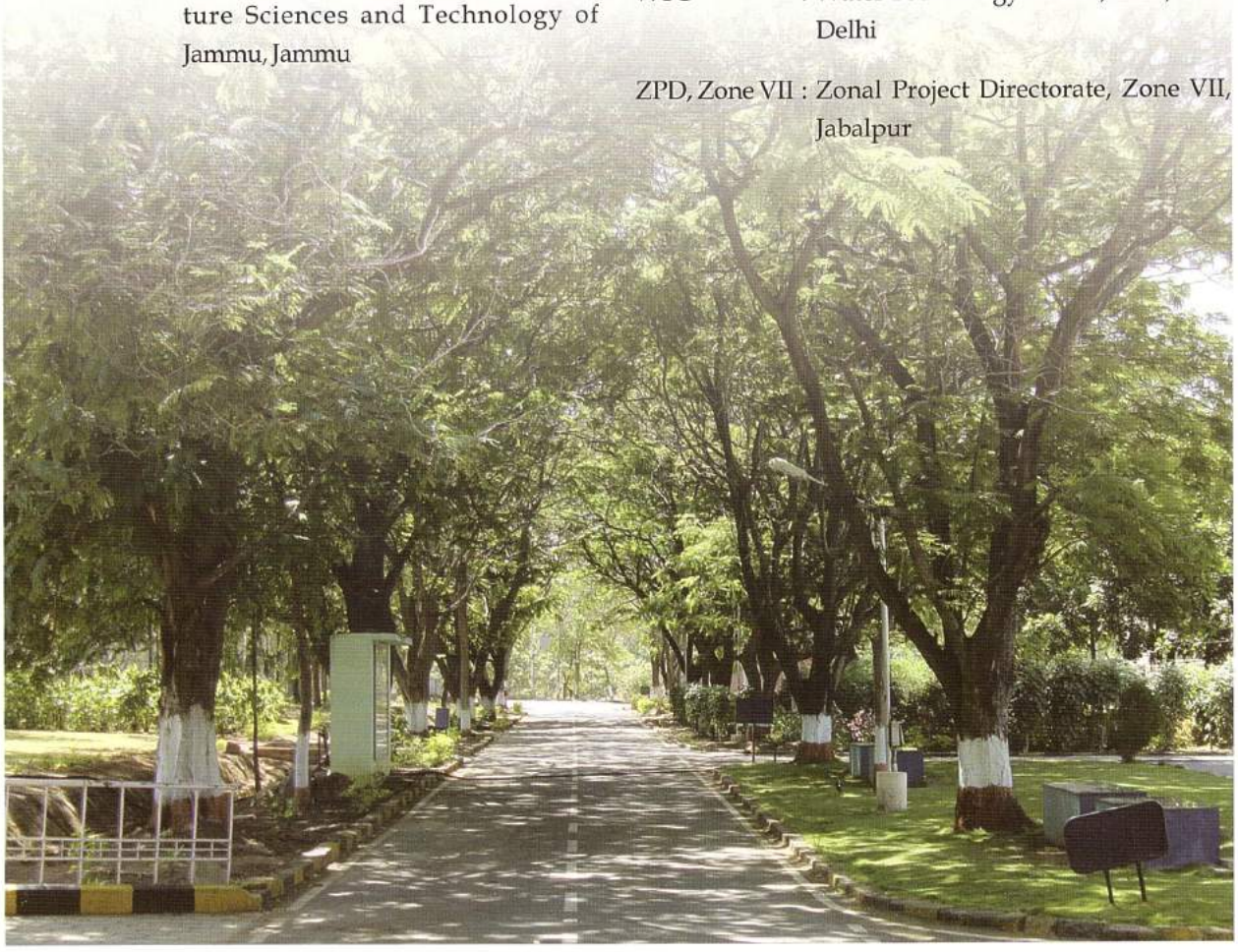
AAU-A	: Anand Agricultural University, Anand
AAU-J	: Assam Agricultural University, Jorhat
ACRI	: Agricultural College and Research Institute, Madurai
AICRP	: All-India Coordinated Research Project
ANGRAU	: Acharya N.G. Ranga Agricultural University, Hyderabad
ASRB	: Agricultural Scientists Recruitment Board, New Delhi
ATMA	: Agricultural Technology Management Agency
B.Tech	: Bachelor of Technology
BAU	: Birsa Agricultural University, Ranchi
BCKVV	: Bidhan Chandra Krishi Viswavidyalaya, Kalyani
BHU	: Banaras Hindu University, Varanasi
BITS	: Birla Institute of Technology and Science
CAFT	: Centre for Advanced Faculty Training
CARI	: Central Agricultural Research Institute, Port Blair
CARI	: Central Avian Research Institute, Izatnagar
CARI-RRS	: Central Avian Research Institute-Regional Research Station, Bhubaneswar
CAU	: Central Agricultural University
CAZRI	: Central Arid Zone Research Institute, Jodhpur
CCSHAU	: Chaudhary Charan Singh Haryana Agricultural University, Hisar
CGIAR	: Consultative Group for International Agricultural Research
CHES	: Central Horticultural Experiment Station, Chettalli
CHES	: Central Horticultural Experiment Station, Bhubaneswar
CIAE	: Central Institute of Agricultural Engineering, Bhopal
CIBA	: Central Institute of Brackishwater Aquaculture, Chennai
CICR-RRS	: Central Institute for Cotton Research-Regional Research Station
CIFA	: Central Institute of Fisheries Aquaculture, Bhubaneswar
CIFE	: Central Institute of Fisheries Education, Mumbai
CIFRI	: Central Inland Fisheries Research Institute, Barrackpore
CIMMYT	: Maize and Wheat Improvement Centre, Mexico
CIPHET	: Central Institute of Post-Harvest Engineering Technology, Ludhiana
CIRB	: Central Institute for Research on Buffaloes, Hisar
CIRG	: Central Institute for Research on Goats, Makhdoom
CISH	: Central Institute for Sub-Tropical Horticulture, Lucknow
CITH	: Central Institute of Temperature Horticulture, Srinagar

CMFRI	: Central Marine Fisheries Research Institute, Kochi
CMS	: Content Management System
CoP	: Community of Practice
CPB	: Capacity Building Programmes
CPCRI	: Central Plantation Crops Research Institute, Kasaragod
CPI	: Consortia Principal Investigator
CPWD	: Central Projects and Works Department
CRIDA	: Central Research Institute for Dryland Agriculture, Hyderabad
CRIJAF	: Central Research Institute for Jute and Allied Fibres, Kolkata
CRRI	: Central Rice Research Institute, Cuttack
CSAUAT	: Chandra Shekhar Azad University of Agriculture & Technology, Kanpur
CSKHPKV	: CSK Himachal Pradesh Krishi Viswavidyalaya, Palampur
CSSRI	: Central Soil Salinity Research Institute, Karnal
CSWCRTI	: Central Soil and Water Conservation Research and Training Institute, Dehradun
CSWRI	: Central Sheep and Wool Research Institute, Avikanagar
CTCRI	: Central Tuber Crops Research Institute, Thiruvananthapuram
CTRI	: Central Tobacco Research Institute, Rajahmundry
DCR	: Directorate of Cashew Research, Puttur
DGR	: Directorate of Groundnut Research, Junagadh
DMR	: Directorate of Maize Research, New Delhi
DMR	: Directorate of Mushroom Research, Solan
DOGR	: Directorate of Onion and Garlic Research, Pune
DOPR	: Directorate of Oil Palm Research, Pedavegi
DOR	: Directorate of Oilseeds Research, Hyderabad
Dr PDKV	: Dr Panjabrao Deshmukh Krishi Vidyapeeth, Akola
DRR	: Directorate of Rice Research, Hyderabad
DRWA	: Directorate of Research on Women in Agriculture, Bhubaneswar
Dr YSRHU	: Dr Y.S.R. Horticultural University, Tadepalligudem
DSR	: Directorate of Seed Research. Mau
DWR	: Directorate of Wheat Research, Karnal
DWSR	: Directorate of Weed Science Research, Jabalpur
EDP	: Executive Development Programme
FDP	: Faculty Development Programme
FET	: Field Experience Training
FGD	: Focussed Group Discussion
FOCARS	: Foundation Course for Agricultural Research Service
GADVASU	: Guru Angad Dev Veterinary and Animal Sciences University, Ludhiana

GBPUAT	: Govind Ballabh Pant University of Agriculture and Technology, Pantnagar
GFR	: General Financial Rules
GIS	: Geographical Information System
ha	: Hectare
HOD	: Head of Division
HRD	: Human Resource Development
HYPM	: Half Yearly Progress Monitoring
IARI	: Indian Agricultural Research Institute, New Delhi
IARI	: Indian Agricultural Research Institute, New Delhi
IASRI	: Indian Agricultural Statistics Research Institute, New Delhi
ICAR	: Indian Council of Agricultural Research
ICAR-ARS	: Indian Council of Agricultural Research-Agricultural Research Service
ICARGOA	: ICAR Research Complex for Goa, Goa
ICARISAT	: International Crops Research Institute for the Semi-Arid Tropics, Patancheru
ICAR-NEHR	: ICAR Research Complex for North Eastern Hill Region
ICRISAT	: International Crops Research Institute for the Semi-Arid Tropics, Patancheru
ICT	: Information and Communication Technology
IGFRI	: Indian Grassland Fodder Research Institute, Jhansi
IIHR	: Indian Institute of Horticultural Research, Bengaluru
IINRG	: Indian Institute of Natural Resins and Gums, Ranchi
IISR	: Indian Institute of Sugarcane Research, Lucknow
IISS	: Indian Institute of Soil Science, Bhopal
IIT	: Indian Institute of Technology
IIVR	: Indian Institute of Vegetable Research, Varanasi
IPR	: Intellectual Property Right
IVRI	: Indian Veterinary Research Institute, Izatnagar
JNKVV	: Jawaharlal Nehru Krishi Viswavidyalaya, Jabalpur
JNTU	: Jawaharlal Nehru Technological University, Hyderabad
KAU	: Kerala Agricultural University, Thrissur
KVAFSU	: Karnataka Veterinary, Animal and Fisheries Sciences University, Bidar
KVK	: Krishi Vigyan Kendra
L&CB	: Learning and Capacity Building
LLRUVAS	: Lala Lajpat Rai University of Veterinary and Animal Sciences, Hisar
LMS	: Land Management Systems
MANAGE	: National Institute of Agricultural Extension Management, Hyderabad
MHRD	: Ministry of Human Resource Development
MPKV	: Mahatma Phule Krishi Vidyapeeth, Rahuri
MPUAT	: Maharana Pratap University of Agriculture and Technology, Udaipur

NAARM	: National Academy of Agricultural Research Management, Hyderabad
NAIP	: National Agricultural Innovation Project
NARS	: National Agricultural Research System
NBAII	: National Bureau of Agricultural Important Insects, Bengaluru
NBAIM	: National Bureau of Agriculturally Important Microorganisms, Mau
NBFGR	: National Bureau of Fish Genetic Resources, Lucknow
NBSSLUP	: National Bureau of Soil Survey and Land Use Planning, Nagpur
NDRI	: National Dairy Research Institute, Karnal
NFBSFARA	: National Fund for Basic Strategic and Frontier Application Research in Agriculture
NIASM	: National Institute of Abiotic Stress Management, Baramati
NIT	: National Institute of Technology
NRC for Agroforestry	: National Research Centre for Agroforestry, Jhansi
NRC for Banana	: National Research Centre for Banana, Tiruchirapalli
NRC for Litchi	: National Research Centre for Litchi, Muzaffarpur
NRC for Orchids	: National Research Centre for Orchids, Pakyong
NRC on DNA	: National Research Centre on DNA Fingerprinting, New Delhi
NRC on Yak	: National Research Centre on Yak, West Kameng
NRCC	: National Research Centre on Camel, Bikaner
NRCC	: National Research Centre for Citrus, Nagpur
NRCM	: National Research Centre on Meat, Hyderabad
NRCPB	: National Research Centre on Plant Biotechnology, New Delhi
NRCSS	: National Research Centre on Seed Spices, Ajmer
OCB	: Organizational Citizenship Behaviour
OCW	: Open Course Ware
OUAT	: Orissa University of Agriculture and Technology, Bhubaneswar
PAU	: Punjab Agricultural University, Ludhiana
PDADMAS	: Project Directorate on Animal Disease Monitoring and Surveillance, Bengaluru
PDP	: Project Directorate on Poultry, Hyderabad
PGDMA	: NAARM Post-graduate Diploma in Management-Agriculture
PGD-TMA	: NAARM Post-graduate Diploma in Technology Management in Agriculture
PGIS	: Participatory Geographic Information System

PIMS	: Personal Information Management Systems
PIU	: Projects Implementation Unit
PRA	: Participatory Rural Appraisal
RARS	: Regional Agricultural Research Station, Maruteru
RAU	: Rajendra Agricultural University, Patna
RFD	: Result Framework Document
RPF	: Research Project Files
RTI	: Right to Information
SAUs	: State Agricultural Universities
SKUAST	: Sher-e-Kashmir University of Agriculture Sciences and Technology of Jammu, Jammu
SVVU	: Sri Venkateswara Veterinary University, Tirupati
t	: Tonnes
TANUVAS	: Tamil Nadu Veterinary and Animal Sciences University, Chennai
TNAU	: Tamil Nadu Agricultural University, Coimbatore
TOFEL	: Test of English as a Foreign Language
UAS	: University of Agricultural Sciences, Raichur
UGC	: University Grants Commission
VPKAS	: Vivekanand Parvatiya Krishi Anusandhan Sansthan, Almora
WTC	: Water Technology Centre, IARI, New Delhi
ZPD, Zone VII	: Zonal Project Directorate, Zone VII, Jabalpur




संकाय भवन
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प्रशासन भवन
ADMINISTRATION BUILDING
स्नातकोत्तर परिसर
PG COMPLEX

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