





वार्षिक प्रतिवेदन
Annual Report
2006-2007

NAARM

राष्ट्रीय कृषि अनुसंधान प्रबंध अकादमी
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Preface

It gives me immense pleasure in presenting this document as a comprehensive record of the Academy's activities and accomplishments during 2006-2007. This report details the progress and achievements of the Academy in its mandated areas of training, research, collaboration, consultancy and policy support.

A significant achievement of the year was that the Academy was recognized as the focal point for initiating activities under National Agricultural Innovation Project (NAIP) and working as an extended arm of its PIU. A Help Desk was created at the Academy for facilitating the concept note and proposal writing under the key components of NAIP. National Workshop on Training Needs Assessment for Learning and Capacity Building (L&CB) (under NAIP), NAIP Awareness Building Workshop, Induction Workshop-cum-Training on Development of Research Proposals in Public–Private Consortia mode (under NAIP), Sensitization Workshop on Information and Communication Technology (ICT) Projects under (NAIP) were organized.

During this period, 62 programmes were held, and a total of 1547 scientists, teachers, administrators and finance officers were trained. Thirteen off-campus programmes, one international programme on Research Extension Linkages for Effective Delivery of Agricultural Technologies in South Asian Association for Regional Cooperation (SAARC) Countries (in collaboration with SAARC Agricultural Information Centre, Dhaka, Bangladesh), five ICAR sponsored Summer Schools and two Winter Schools, were the other highlights of the year.

This year, one of our colleagues was deputed abroad for training and many of our faculty and staff members participated and presented papers in various workshops and seminars at various institutes in the country and abroad. The research papers, technical bulletins and other materials published by the scientists of the Academy are appreciable.

Research projects were prioritized with reference to the current needs. Application of GRAM GIS in micro-level planning and development for sustainable agriculture was streamlined, a new methodology is being developed and standardized for qualitative rating of colleges under the Agricultural Universities, recommendations were drawn on various aspects of higher education in agriculture to face the challenges of GATS.

The ICAR Inter-institutional Tournament (Southern Zone) was hosted by the Academy, and NAARM won several prizes in various events. The Overall Team Championship was awarded to NAARM. The Academy also bagged several trophies at the Annual Rose Show organized by Hyderabad and Secunderabad Rose Societies.

I wish to take this opportunity to put on record our sincere thanks and gratitude for the support, guidance, and encouragement received from Dr Mangala Rai, Secretary, DARE, Govt. of India, and Director General, ICAR; Dr J.C. Katyal, DDG (Education), ICAR. Also, I am grateful to Directors, Administrative and Finance Officers of ICAR for their cooperation and advice from time to time. I also thank the Chairman and members of RAC and IMC of the Academy for their valuable help and guidance.

Thanks are due to the Editorial Board, especially my esteemed colleagues Drs R.K. Samanta, T. Balaguru, P. Manikandan, D. Rama Rao, S.K. Nanda, R.V.S. Rao, B.S. Sontakki, and V.K.J.R. Rao, in bringing out this Annual Report. All the faculty members deserve appreciation for their timely supply of information. I also thank all technical, administrative and supporting staff as well as others for their meaningful contributions to the Academy in its endeavour.

Hyderabad

(S.M. Ilyas)

Executive Summary

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Executive Summary

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Training and capacity building is the primary mandate of the Academy. This activity was pursued with enthusiasm. During the reported period, a total of 62 programmes including training programmes, workshops and orientation meetings were organized with 1,547 participants. Notable achievements include as many as seven Summer/Winter Schools and a spurt in demand-driven off-campus programmes. The Academy continued to provide policy support to the National Agricultural Research System (NARS) in general and Indian Council of Agricultural Research (ICAR) in particular through its interactive policy dialogue meetings and workshops. Significant ones in this category include the National Workshop on Training Needs Assessment for Learning and Capacity Building (L&CB) under the National Agricultural Innovation Project (NAIP), NAIP Awareness Building Workshop, Induction Workshop-cum-Training on Development of Research Proposals in Public–Private Consortia mode (Under NAIP), Sensitization Workshop on Information and Communication Technology (ICT) Projects Under NAIP, and Research-Extension Linkages for Effective Delivery of Agricultural Technologies in South Asian Association for Regional Cooperation (SAARC) Countries (in collaboration with SAARC Agricultural Information Centre, Dhaka, Bangladesh).

Besides undertaking training as the major mandate, NAARM is also mandated to undertake research studies on management problems faced by the agricultural research and educational institutions in the NARS. These studies are generally of short duration in nature and are meant not only to serve as technical backstopping for different training programmes organized by the Academy but also to provide policy support to the NARS in the specialized areas of agricultural research and education management. At present, the Academy has 13 on-going research projects, ten of which are institute (NAARM) funded and the remaining three are funded by AP Cess Scheme. During the ongoing year, nine projects were successfully completed, three of which are institute projects and the six running are externally funded (4 from AP Cess and 1 each from APNL Bt Project and Department of Science and Technology (DST). Major research achievements of these projects are summarized below:

- Books on “Regulatory and Operational Mechanisms Related to Agro-biodiversity” and “Developing Winning Proposals in Agricultural Research” were published and are being used as resource material for capacity building of NARS scientists in these areas.
- Application of GRAM GIS in micro-level planning and development for sustainable agriculture was streamlined.
- Through an AP Cess funded project, methodology is being developed and standardized for qualitative rating of Colleges under the Agricultural Universities.
- Methodological protocol was finalized for assessing the impact of fisheries research in India under the AP Cess funded Network Project on Impact Assessment of Fisheries Research in India.

- As a part of the drive to bridge the digital divide envisaged by the Millennium Development Goal, the Academy in association with other agri-research institutions in Hyderabad is implementing a project on "ICTs for Information Sharing Among Farmers" at Gujja Village, Nalgonda District, Andhra Pradesh.
- Issues and implications pertaining to agricultural higher education in India under GATS were identified.
- Appropriate strategy for promotion of bio-fuels in Andhra Pradesh was developed.
- An on-line Delphi process was developed to seek experts' opinions on issues of topical interest.
- Findings and recommendations of studies on training needs and impact assessment were used in prioritizing and finalizing the training schedule of the Academy.
- Decision support system for watershed management is developed as a deployable application by integrating independent GIS layers of KK3 watershed (about 430 sq km) in Mahabubnagar district of Andhra Pradesh.

On competitive grounds, the United Nations Conference on Trade and Development (UNCTAD) has sanctioned a project on "Study on Socio-economic Implications of GI Registration for Agricultural and Non-agricultural Commodities/ Products" to the Academy. The project would be completed within four months from January to April 2007. Under this project, the geographical indications would be identified in three geographical regions covering twelve states of India for detailed study.

The Academy has been providing significant support in planning, operationalizing and implementing the NAIP. NAARM is recognized as the focal point for initiating activities under NAIP. A Help Desk was created at NAARM for facilitating the concept note and proposal writing under the key Components of NAIP.

Policy support was also given in the following initiatives of ICAR:

- Indo-US Agricultural Knowledge Initiative
- Niche Areas of Excellence in Educational Technology
- Project on Developing Model Instructional Farms in Colleges of Agricultural Universities.
- Intellectual Property and Technology Management in ICAR

The Academy bagged twenty first prizes and twelve second prizes in different categories in the Annual Rose Shows organized by the Hyderabad Rose Society and Secunderabad Horticultural Society. The Academy hosted ICAR Inter-institutional Tournament (Southern Zone) from March 2 to 6, 2007. The Overall Team Championship was awarded to NAARM.

Activities at a Glance

Activities at a Glance

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Activities at a Glance

- A six-day Faculty Development Programme in Educational Technology and Research Project Management was organized at Tamil Nadu Agricultural University (TNAU), Coimbatore, from April 6 to 11, 2006. The programme aimed to develop educational technology and its application to personality development and leadership skills. Thirty faculty members from TNAU attended the programme.

- A meeting was organized to finalize the concept note for project proposal on "Modernization of Instructional and Research Farms of the Agricultural Universities" on April 12, 2006 under the Chairmanship of Dr S. Praksh Tiwari, Director, NAARM. Fifteen members attended the meeting. The concept note and time-schedule for project formulation was finalized and sent to ICAR Headquarters.

- An off-campus training programme on Mechanism for Protection of Intellectual Property was organized at Assam Agricultural University, Guwahati, from April 18 to 22, 2006. The programme was organized to sensitize the scientists and teachers from the Agricultural Universities in North-East and West Bengal to mechanisms for the protection of Intellectual Property (IP) under Trade Related Intellectual Properties (TRIPS). Forty-five senior faculty members attended the programme.

- Two workshops on "Right to Information (RTI) Act, 2005" were organized during April 18-19; and 25-26, 2006. These workshops were aimed at familiarizing the designated Public Information Officers of ICAR institutes to implement and comply with the provisions under the RTI Act. A total of 92 Public Information Officers and Asst. Public Information Officers from ICAR institutes participated in these two workshops.

- A Management Development Programme in Agricultural Research was organized from April 19 to 25, 2006 to develop competencies in the middle level organizational set-up of research institutions and sensitize on the behavioural issues of people at work. Seven Heads of the Departments of ICAR institutes and SAUs participated in the programme.

- A two-day workshop on Assessing the Impact of Fisheries Research in India was organized during April 21 and 22, 2006 to evaluate the performance of fisheries research to justify investment in the larger interest. Twenty-five fisheries scientists participated in the workshop.

- A five-day training programme on Developing Winning Research Proposals in Agricultural Research was organized from April 27 to May 2, 2006. The

programme was aimed at developing necessary skills among the participants for writing research proposals that can win funds from donors. Twenty-six scientist participants from ICAR Institutes and SAUs attended the programme.

- A three-week Refresher Course on Advances in Educational Technology was organized from May 9 to 29, 2006 to develop need-based knowledge, skills, and competencies among teachers in agricultural education and to systematically apply the principles of instructional design and development to the planning and preparation of teaching aids. Ten Assistant Professors and Associate Professors, involved in undergraduate and postgraduate teaching in eight SAUs and two ICAR institutes participated in the programme.

- One-day programme on Karya Kushalata Evam Samsthaneeya Tanav Par Rastriya Sanghosti was organized on May 16, 2006 to improve the work efficiency and to gain insight into stress and develop appropriate coping mechanisms and strategies. Twenty seven scientists and administrative personnel from ICAR institutes attended the programme.

- A three-week Summer School on Advances in Agricultural Research Project Management was organized from June 1 to 21, 2006 to develop the researcher's future perspective of Indian agriculture, in response to changing global agricultural scenario, and to acquaint them with appropriate tools and techniques for efficient and effective management of research projects. The Summer School benefited twenty-six scientists and teachers from ICAR institutes and SAUs.

- "Gahan Hindi Prashikshan Va Karayashala" was organized from June 2 to 7, 2006 for the employees of ICAR institutes, who are working in sections other than Hindi. The major objective of the programme was to discuss about the experiential usage of Hindi. Twenty-three technical and administrative personnel attended the programme.

- A five-day Faculty Development Programme in Educational Technology was organized from June 5 to 9, 2006 for the UG teachers of Tamil Nadu Agricultural University at Coimbatore, to develop need based knowledge skills and competencies among Uundergraduate teachers, and to introduce the use of computer applications in educational technology. Thirty teachers of TNAU from ten campuses participated in the programme.

- A three-week Summer School on Participatory Video Production for Decision and Empowerment was organized from June 7 to 27, 2006 to orient the participants to the latest developments in participatory information need assessment through Participatory Rural Appraisal (PRA) techniques, and

provide experiential learning to the participants on digital video production and its application for decision making and empowerment in rural setting. Nineteen scientists from ICAR institutes and SAUs attended this Summer School.

- A one-week programme on Leadership and Personality Development was organized from June 14 to 20, 2006. The programme aimed at equipping the researchers and teachers in the National Agricultural Research System with the knowledge and tools that would help them identify personal impediments to develop effective leadership capabilities. Ten scientists attended the programme.

- A two-day National Workshop on Training Needs Assessment for L&CB under NAIP was organized during June 20 and 21, 2006 on brainstorming mode. The workshop was aimed at finding out needs of the institutes and its personnel engaged in research, teaching, extension, training and over all development so as to provide support through newly launched NAIP. Forty one participants attended the programme.

- A three-week Summer School on Optimizing Learning Teaching in SAU System was organized from June 20 to July 10, 2006 to enable the participants develop an awareness on philosophy of educational methodology and instructional technology and to sensitize them to different methods of teaching and learning and provide hands on experience on effective teaching with an insights on pedagogy, andragogy and synergogy as applied to SAU system. Twenty four participants attended the programme.

- Under NAIP four Training Programmes of five days duration each, (June 05 to 09, 13 to 17, 20 to 24, and 27 to July 1) were organized for Finance Officers / Officials of ICAR institutes, to sensitize them about the preliminary concepts and the scope and possibilities of using IT tools in finance and administrative management. Sixty finance and administrative personnel of various ICAR institutes attended the programme.

- A four-day Workshop on Development of Research Proposals in Public Private Consortia mode for NAIP was organized from June 27 to 30, 2006. The workshop aimed at sensitizing the scientists on developing research proposals that can win funds from donors. Forty four senior executives from NARS (ICAR, SAUs, private R & D Organizations and NGOs) attended the workshop.

- A three-week Summer School on Geographical Information System (GIS) based Decision Support Systems for Sustainable Agriculture was organized from July 5 to 25, 2006, to introduce the concepts of GIS and related spatial technologies like remote sensing and image processing and to provide hands-on experience

of GIS software and hardware. Twenty six Scientists and Faculty members of ICAR institutes and SAUs attended the programme.

- One-week Management Development Programme (MDP) on Managing Intellectual Property in Agricultural Research Organizations was organized from July 13 to 19, 2006 to strengthen the knowledge of agricultural scientists in the area of IPR's with respect to national and international scenario. Twenty three participants attended the progaramme.

- A three-week Refresher Course on Computer based Multimedia Presentation was organized from July 14 to August 3, 2006, to familiarize participants with multimedia production tools and enable them to develop their own modules. Twenty participants from different ICAR institutes and State Agricultural Universities attended the programme.

- A three-week Summer School on Advances in Agribusiness and Information Technology was organized from July 19 to August 8, 2006, to acquaint participants with appropriate tools and techniques for analyzing markets and information system for efficient and effective management of agribusiness. Twenty six participants attended the programme.

- A three-month Foundation Training Programme for the Combined Cadre Direct Recruit Administrative Officers and Finance and Accounts Officer of ICAR was organized from July 19 to October 16, 2006. This programme aimed to improve administrative efficiency and financial management to develop need-based competencies and to strengthen the administrative response to the needs of the research system. Twenty one participants attended the programme.

- A five-day Workshop on Improving Personality Profile and Human Communication in Organizations was organized from August 1 to 5, 2006 with the multi focus objectives like – how can we create conditions that will mobilize human effort for achieving organizational objectives and, at the same time, make work sufficiently meaningful and rewarding so that people want to produce and receive personal satisfaction from their efforts. Ten Scientists and senior faculty members from ICAR institutes, SAUs and other similar academic and R & D organizations attended the workshop.

- One-day Stakeholder Sensitization Workshop of NAIP was organized on August 12, 2006. This is the first awareness-building workshop in its series. 72 members from ICAR institutes, NGOs, private or public R&D organizations, private organizations took part in the workshop.

- A one-week Training Programme on Implications of WTO Agreements on Agriculture for the senior officers of Government of Mahhya Pradesh was

organized from August 23 to 29, 2006, to sensitize the participants to the implications of various international agreements in the post-WTO regime on Indian agriculture, and the consequent policy and institutional imperatives for agricultural research systems. Seven officers from Government of Mahdhya Pradesh attended the programme.

- A three-day short course on Improving Efficiency of Scientific and Technical Manpower for the Officials of NRC on Agroforestry, Jhansi, was organized from August 21 to 24, 2006 provide knowledge and skills to the participants on various issues that help improve their efficiency and effectiveness in the organization and develop an action plan for self and organizational development. Twenty eight scientific and technical officers were benefited through this programme.

- A five-day specialized short course on Improving Efficiency of Administration, Finance & Accounts Manpower for the Officials of NRC on Agroforestry, Jhansi was organized from August 22 to 26, 2006, to appraise participants in changing scenario and trends in administration, finance, accounts and audit and to sensitize the self and change the mindset to evaluate the efficiency and effectiveness for achieving objectives of their organizations. Twenty two officers were benefited through this programme.

- Sensitization Workshop on ICT Projects under NAIP was organized during September 4 and 5, 2006 for the nodal officers on ICT projects. The workshop was organized to prepare proposals by select SAUs and ICAR institutes as deliverable modules within one and half year with a scope to revise and extend further, based on the progress and further need assessment that is likely to be completed by then. Thirty three participants from SAUs, ICAR and other organizations including private sector participated in the workshop.

- A four-day off-campus programme on Administrative and Finance Management was organized at ICAR Research Complex, Goa, during September 4 to 7, 2006 to orient the administrative and accounts personnel to their roles and responsibilities, provide them opportunities to enhance their skills and understanding on various issues that would facilitate them in discharging their support functions more meaningfully in the organization. Twenty four participants attended the programme.

- Winter School on Team building and Interpersonal Relationship for Agricultural Research Scientists and Teachers was organized during September 6 to 26, 2006, to sensitize agricultural professionals to the issues of interpersonal relationships and team building in the organization. Seventeen middle level scientists from ICAR institutes and Assistant / Associate Professors from SAUs attended the programme.

- Two programmes on WTO and its Implications on Agriculture were organized during September 11 to 16 and September 25 to 30, 2006 for the Officers of the Department of Agriculture, Government of Andhra Pradesh. The programmes aimed to help the scientific personnel to build new avenues for better trading opportunities, and enhance the livelihood of their clients in the new competitive global economies. Forty seven senior officers of Government of Andhara Pradesh participated in the two programmes.

- A three-day Special Training Programme on Vigilance Administration and Management was organized from September 18 to 20, 2006 to provide an overview of vigilance administration and management and to update and acquaint the Directors of the Institutes with the latest Central Vigilance Commission guidelines. Seventeen Directors of ICAR institutes located in six states viz. Andhra Pradesh, Karnataka, Kerala, Tamil Nadu, Maharashtra and Goa participated in the programme.

- A four-day short course on Improving Efficiency of Scientific and Technical Manpower was organized from September 25 to 28, 2006 at IGFRI, Jhansi, to provide knowledge and skills to the participants on various issues that help improve their efficiency and effectiveness in the organization and develop an action plan for self and organizational development. Twenty five scientific and technical officers were benefited through this programme.

- A four-day specialized short course on Improving Efficiency of Administration, Finance & Accounts Manpower was organized from September 25 to 28, 2006 at IGFRI, Jhansi, to appraise participants in changing scenario and trends in administration, finance, accounts and audit; and to sensitize the self and change the mindset to evaluate the efficiency and effectiveness for achieving objectives of their organizations. Twenty five officials were benefited through this programme.

- A three-week Refresher Course on Information Technology in Agriculture for Effective Decision Support was organized from October 4 to 24, 2006 to review and update the latest trends in Information Technology applications for information management in agriculture and to sensitize the clientele on the knowledge management and knowledge discovery through decision support systems for effective decisions. Twelve middle level scientists from ICAR institutes and Assistant / Associate Professors from State Agricultural Universities attended the programme.

- A two-week programme on Participatory Rural Appraisal and Participatory Learning and Action Techniques for Research and Extension in Agriculture was organized from October 6 to 18, 2006, to make the participants understand various PRA techniques and their importance in Research, Extension and

Farming (REF) systems and to impart the required skills to the participants in using various PRA techniques in REF systems. Seven participants attended the programme.

- A five-day training programme on Developing Winning Research Proposals in Agricultural Research was organized from October 9 to 13, 2006 to develop necessary skills among the participants for writing research proposals that can win funds from donors. Seventeen participants attended the programme.

- A two-day off-campus programme on Implications of WTO Agreement on Agriculture was organized during October 11 and 12, 2006 for the officers of agriculture, Department of Agriculture, Government of Madhya Pradesh at Bhopal, to develop competency among the officers to face WTO challenges through appropriate technology development, protection and dissemination at state level. Thirty two officers attended the programme.

- A six-day programme on WTO and its Implications on Agriculture was organized from October 30 to November 4, 2006 for the Officers of the Department of Agriculture, Government of Andhra Pradesh. The programmes aimed to help the scientific personnel to build new avenues for better trading opportunities, and enhance the livelihood of their clients in the new competitive global economies. Twenty two senior officers of Government of Andhra Pradesh participated in two programmes.

- A three-week Winter School on Personality Development and Self motivation for enhanced performance of agricultural scientists and teachers was organized from November 8 to 28, 2006. The programme aimed to help researchers and teachers in the national agricultural research system with the appropriate knowledge and tools that would help them identify personal impediments in relation to personality and motivation. Twenty one middle level scientists from ICAR institutes and Assistant / Associate Professors from SAUs attended the programme.

- A programme on WTO and its Implications on Agriculture was organized from November 13 to 18, 2006 for the Officers of the Department of Agriculture, Government of Andhra Pradesh. The programme aimed to help the scientific personnel to build new avenues for better trading opportunities, and enhance the livelihood of their clients in the new competitive global economies. Seventeen officers of Government of Andhra Pradesh participated in the programme.

- One-day Financial Review Committee meeting of Finance and Accounts Officers of ICAR was organized on November 17, 2006 to review the overall financial management, and implementation of new general financial rules for

achieving the organizational goals. One hundred and five Finance and Accounts Officers of ICAR institutes participated in the meeting.

- A three-day regional workshop on Research-Extension Linkages for Effective Delivery of Agricultural Technologies in SAARC Countries was organized from November 20 to 22, 2006, in collaboration with SAARC Agricultural Information Centre (SAIC), Dhaka, to study national policy processes providing framework and practices for establishing stronger agricultural research-extension linkage. Sixty eight delegates from India, Nepal, Bangladesh, Pakistan, Sri Lanka, Maldivies, and Bhutan participated in the workshop.

- An off-campus programme on Improving Efficiency of Scientific and Technical Manpower was organized at IGFRI, Jhansi, from November 29 to December 2, 2006. The major objectives of the programme were to orient the participants to the principles and concept of research project management and to provide knowledge and skills to the participants for management of individual, group, and organizational behaviour. Twenty five participants of IGFRI, Jhansi, attended the programme.

- A programme on Managing Video Production was organized from December 12 to 23, 2006. The progaramme aimed at equipping the participants with necessary knowledge and skills in planning and production of educational video programmes. The programme covered broad areas such as video technology, script preparation, video shooting, recording, video editing, scripting, special effects and animation. Twelve participants attended the programme.

- A three-day programme on Vigilance Administration and Management was organized at NDRI, Karnal, for ICAR Institute Directors from December 5 to 7, 2006 to provide an overview of vigilance administration and management and to update and acquaint the Directors of the Institutes with the latest Central Vigilance Commission guidelines. Nineteen Directors of ICAR institutes attended the programme.

- Eightieth Foundation Course for Agricultural Research Service (FOCARS) was organized from January 8 to May 7, 2007. Seventy eight ARS scientist probationers attended the programme.

- A programme on Performance Assessment of Agricultural Research Organizations was organized from January 4 to 9, 2007 to impart acquaintance with the identification and measurement of suitable research output and outcome indicators and the methodology for assessing the performance of the agricultural research organizations. Seven senior scientists from ICAR institutes and SAUs participated in the programme.

- A six-day programme on "Gahan Hindi Prashikshan Va Karayashala" was organized from February 1 to 6, 2007 for the employees of ICAR institutes, who are working in sections other than Hindi. The major objective of the programme was to discuss about the experiential usage of Hindi. Twenty-two participants attended the programme.

- Two off-campus programmes of two days each on Human Relations Management at Work were organized on February 5 to 7, 2007 and February 6 to 8, 2007 respectively at ICAR Research Complex for Eastern Region, Patna. The major objective of the programme was to enhance and understanding of organizational behaviour and improve the inter personnel relations among coworkers. Fifty participants attended these programmes.

- A one-week programme on Stress Management Strategies for Organizational Effectiveness was organized from February 15 to 21, 2007. The programme provided ample opportunities to the participants to gain insight into stress factors and develop appropriate coping mechanisms and strategies. Six participants attended the programme.

- A one-week off-campus programme on Educational Methodology and Instructional Technology was organized from February 19 to 25, 2007 at University of Agricultural Sciences, Dharwad. The programme was aimed at enhancing the need-based knowledge, skills, and competencies in educational technology among teachers and to facilitate them systematically apply the principles of instructional design and development in the planning and preparation of teaching modules and aids. The programme was conducted under the project titled "Niche Area of Excellence on Educational Technology for Global Competitiveness in Agricultural Education". Twenty five participants attended the programme.

- A Workshop on Data Analysis and Mining was organized on February 26, 2007 in association with Society for Research Management (SORM) and Statistical Package for Social Scientists (SPSS). The main objective was to sensitize on recent developments in information intensive data analysis for more effective decision support and visualize potential applications of these analytical methods in agriculture. Fiftynine Professors and Scientists from different SAUs and ICAR Institutes attended the workshop.

- A three-week refresher course on Computer-based Multimedia Presentation was organized from February 20 to March 12, 2007. The programme aimed to provide hands on experience on multimedia tools to produce various learning modules that help enhance teaching-learning effectiveness and also better understanding and appreciation of use of multimedia in technology development

and transfer. NICHE Area of Excellence in Educational Technology (ICAR) sponsored this programme. Eighteen participants attended the programme.

- A three-week Faculty Development Programme (FDP) on Advances in Educational Technology was organized from February 21 to March 13, 2007. The programme aimed to develop need-based knowledge, skills, and competencies among teachers in educational technology and facilitates them to systematically apply the principles of instructional design and development in the planning and preparation of teaching modules and aids. NICHE Area of Excellence in Educational Technology (ICAR) sponsored this programme. Twenty two Assistant Professors and Associate Professors from ten SAUs involved in undergraduate and postgraduate teaching attended the programme

- A three-week refresher course on GIS based Decision Support Systems for Sustainable Agriculture was organized from March 1 to 21, 2007. The programme aimed to introduce the concepts of GIS and related spatial technologies like remote sensing and image processing and provide hands-on experience of GIS software and hardware. Ten scientists from ICAR institutes and SAUs attended the programme.

- A six-day off-campus programme on Enhancing Human Capabilities at Work was organized at Central Research Institute for Dryland Agriculture, Hyderabad from March 12 to 17, 2007 to improve the human relations, team work, communication and time management; and to forge a sense of unity among all streams of employees viz. scientific, technical, administration and finance. Twenty five participants attended the programme.

- A four-day workshop on Designing Curriculum for the Arising contexts was organized from March 16 to 20, 2007. The Workshop aimed to systematize curriculum development into a process and assess for learning, instructional and performance objectives. Seventeen participants attended the programme.

NAARM - An Overview

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As one of the largest collaborative systems in agricultural research in the World, the Indian NARS employs over 25,000 scientists, who work in institutes distributed throughout the entire length and breadth of the country. Proper management of this vast manpower poses a formidable challenge to the system. It is in this context that the Government of India has established the National Academy of Agricultural Research Management (NAARM), Hyderabad. Since its inception in 1976, the Academy has expanded its horizon of activities over the years. Through its innovative training and research programmes in the specialized areas of Agricultural Research and Education Management, it has helped the systems in evolving appropriate policies to improve the efficiency and effectiveness of research and education in agriculture.

Its scope has been further widened to encompass tailor-made training, especially for the international participants from the developing countries in Asia, Africa and Latin America. Research on management problems has formed another major activity of the Academy. This has provided an input for improvising training and the policy support. The Academy extends a facilitative role to the ICAR in developing policy guidelines on the various issues related to personnel, O & M reforms, HRD, assessment system, and others, all of which are aimed at improving the overall efficiency and effectiveness of the NARS. NAARM has been developing itself into a resource centre for management needs. On the strength of the experienced and expert faculty, the Academy has started offering specialized consultancy services in the areas of its mandated activities.

The Academy strives to generate a sense of fraternity and inculcate a scientific work culture amongst the agricultural scientists and teachers in the country. Being a unique institution of its kind, the Academy is well-poised to augment its usefulness and aims to emerge as an institution *par excellence* to facilitate and support a culture of dynamic management in agricultural research and education.

Vision

To establish itself as an institution *par excellence* to facilitate dynamic management in agricultural research, education, and related innovation systems contributing towards sustainable agriculture, leading to continued food, nutrition, livelihood, and environmental security.

Mission

To enhance the performance and responsiveness of National Agricultural Research System by building capacity in research and policy planning, and fostering an ethos of scientific culture and dynamic management in agricultural research, education, and extension.

Mandate

The Academy is mandated to enhance the efficiency and effectiveness of NARS through:

- Training, research, and consultancy;
- Developing NAARM as a think-tank for organizational renewal and management of change;
- Strengthening partnerships, linkages and networking at national and global level;
- Providing policy support to apex agencies; and
- Enabling development of need-based regional management capabilities in agricultural research, education and extension.

Objectives

Commensurate with the mandate, the following objectives are set for the Academy:

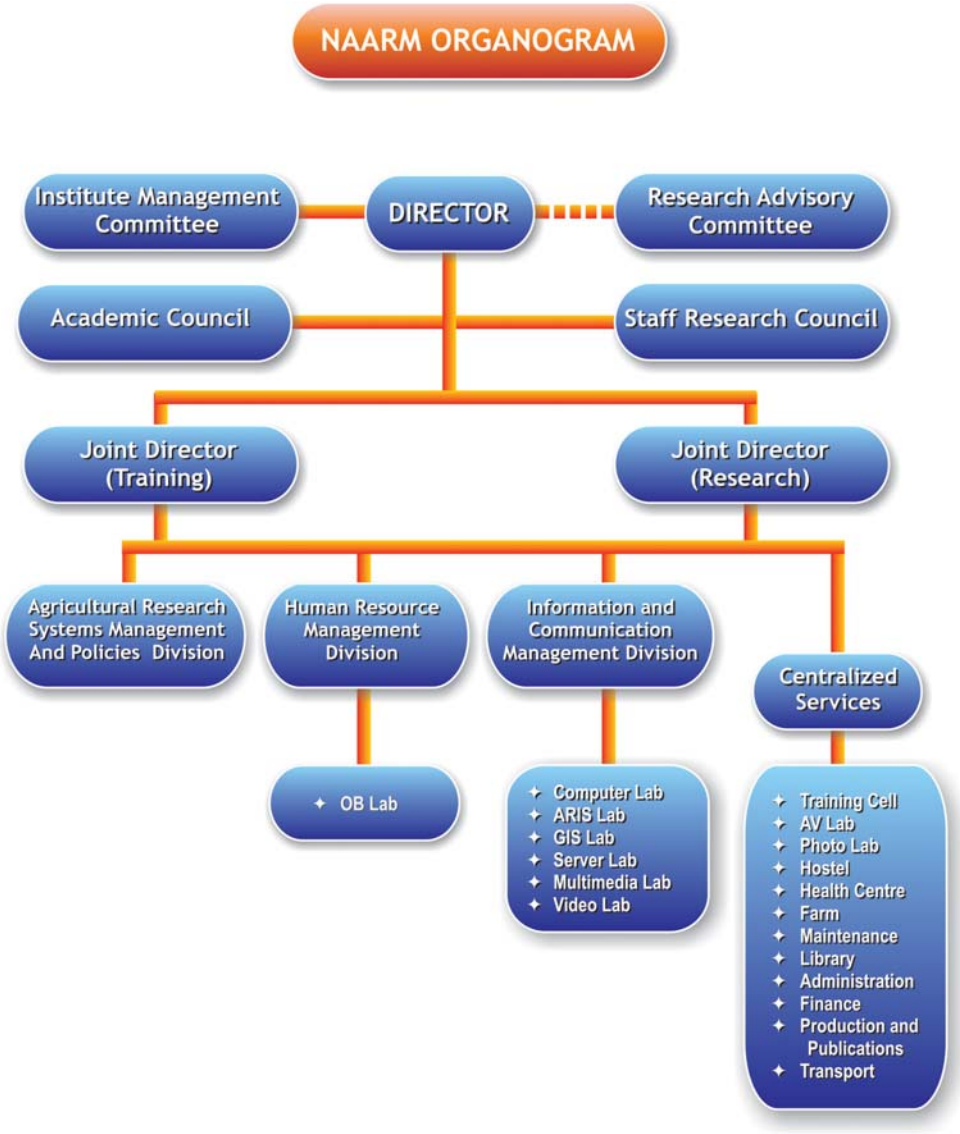
- To plan and organize need-based, multi-tier, stakeholder-driven and customized on-campus and off-campus training programmes;
- To improve management of agricultural education and enhance teaching-learning effectiveness;
- To facilitate technology dissemination management through innovative Information and Communication Technology (ICT) tools;
- To undertake research, offer consultancy and manage dialogues to backstop training and provide policy support to NARS;
- To develop suitable management tools, practices and processes for facilitating organizational effectiveness;
- To assemble quality resource material and function as a repository of information and ideas;
- To promote facilitative work culture for fostering creativity and innovativeness;
- To improve administration and financial management;
- To forge and strengthen partnerships, linkages and networking at regional, national and global levels for the stated objectives; and
- To take up other related activities for fulfilling the mandate from time to time.

The Academy, over the years, has steadily built enviable infrastructural and logistical facilities catering to its expanded activities of training, research, and consultancy. The facilities built over the years are Faculty Block, Academic Block, Administrative Block, Conference Hall and other laboratory facilities like GIS Lab, Video Laboratory, Computer, Multimedia, ARIS and Server Labs, Organizational Behaviour (OB) Labs, Audio-Visual and Communication Labs, apart from Library

and Documentation Centre, Medical and Health Centre, Guest houses and Trainee's living facilities, Housing and Residential Quarters

Organization and Management

The Director leads the Academy. There is a provision of two Joint Directors - Joint Director (Training) and Joint Director (Research). The faculty comprises several senior level scientists who are supported by a number of technical and administrative personnel. Administration, auxiliary and supporting personnel help in attaining Academy's mandated objectives of training, research, consultancy and related programmes and activities. Following is the organogram of NAARM. It details the organizational structure of the Academy.



The Academy receives guidance for its effective functioning from the Institute Management Committee (IMC) and Research Advisory Committee (RAC), comprising eminent scientists, management experts, developmental agencies, and administrative personnel from within and outside the Academy. There are also Academic and Research Councils to guide the training and research activities of the Academy. To effectively implement its mandated activities, the Academy is organized under three Divisions, supported by various centralized services.

Linkages

NAARM has a rewarding and rich experience of having partnership with many Indian and international institutions. Strong linkages have been developed with:

The ICAR system;
Agricultural Universities;
Development Departments;
Private sector;
Department of Science and Technology (DST);
International Crops Research Institute for Semi Arid Tropics (ICRISAT);
World Bank, and Food and Agricultural Organization (World Bank & FAO);
South-East Asian Association for Regional Centre for Graduate Study in Agriculture (SEARC);
South-East Asian Association for Regional Cooperation (SAARC); and
NARS of Developing Countries (Sri Lanka, Nigeria, Yemen, Tanzania, etc.).

Infrastructure

The Academy is situated at Rajendranagar, under Cyberabad Police Station, about 18 km away from the city of Hyderabad. The Academy is established in a green, serene, sylvan, and sprawling campus of about 50 hectares.

The Academy, over the years, has steadily built infrastructure and logistic facilities, commensurate with the tall requirement to provide advanced training and also to pursue its research and consultancy programmes aimed at developing excellence in the system.

The facilities built over the years are detailed below.

- ***Faculty Block, Academic Block, Administrative Block, Conference Hall and Others:*** The Faculty block (built in 1990), Academic Block (1987), Administrative Block (1983), Conference Hall and Committee Hall (1986), Seminar Hall (1990) with all modern amenities and sufficient space for holding training programmes have been built over the years to meet the needs of

various programmes and activities of the Academy. The conference and training facilities of the Academy are often being used by other public undertakings, Agricultural Universities and sister ICAR institutes as well.

- ***Video Laboratory:*** The Video Instruction and Production Lab (VIPL) was originally established in 1986 and subsequently with the support of United Nations Development Programme (UNDP), AHRDP and National Agricultural Technology Project (NATP), it has been developed as a full-fledged modern video production lab. Today, it is one of its kind in the whole of the NARS system. The lab also imparts skill training to the Foundation Course trainees and other special groups of participants and it also caters to the needs of other ICAR institutes, SAUs and central organizations in making professional video programmes.

- ***Computer, Multimedia, Agricultural Research Information System (ARIS) and Server Labs:*** The Academy has a unique centralized computer and multimedia facility with 200 PCs in 3 labs connected with (Local Area Network) LAN. These were established in 2001. Besides, all the faculty, officers and staff working in the various units and divisions are equipped with PCs and the related support systems. Together with the computer lab, the Academy also established an ARIS lab in 1996 to provide training in information management and dissemination. A well-equipped Server Lab to meet its various network applications has been in operation. Today, the Academy can boast of as the only learning centre with modern computer-based instructional and networking facilities and paperless communication system in the whole of Indian NARS.

- ***GIS Lab:*** The Geographic Information System (GIS) Lab with state-of-the-art facilities for training and its application was established at the Academy in 2002 with the support of NATP, DST and AP Cess funds. The GIS Lab intends to become a national clearinghouse of NARS for technical support in GIS application development and geo-referenced data for research and development policy. The Lab has been the focal point of NAARM training programme in the recent past.

- ***Organizational Behaviour (OB), Audio-Visual and Communication Labs:*** To meet the essential needs of socio-psychological behaviour of individual participants under HRD programmes, a well-designed OB lab has been put into operation since 1990 with multimedia production facilities. Similarly, an audio-visual and communication lab has been functioning since 1978 to support the training programmes and which has been updated with modern audio-visual equipment and gadgets (since 1986 with UNDP support).

- ***Library and Documentation Centre:*** The Library and Documentation Centre of the Academy has over 25,000 books and it subscribes to around 200 journals,

including a few on-line journal databases and CD-ROM databases. The library is rich with its unique collections on management, which is extensively used by trainees, faculty members and other staff from a number of neighbouring institutions.

- ***Medical and Health Centre:*** A modest health centre with minimum of diagnostic facilities and other related services has been functioning from 1999 to meet the health care needs of trainee participants, staff members and campus residents including the retired ICAR employees residing at Hyderabad.

- ***Guest Houses and Trainee's Living Facilities:*** For the trainee participants of the Academy, there are 3 hostels namely (i) Halls of Residence having 200 rooms for junior trainees, (ii) Scientists' Home equipped with 30 AC suites for the senior and middle level officers, and (iii) a recently constructed International Guest House with 10 independent suites for international participants. Such training facilities support the trainees and visiting faculty sharing the learning experiences during their stay at the campus.

- ***Housing and Residential Quarters:*** The Academy has in all 97 quarters of different dimensions to house the staff members in the campus. Besides, NAARM has also provided facilities for the ICAR sister institutes – Directorate of Oil Seeds Research, Directorate of Rice Research, National Bureau of Plant Genetic Resource, and Project Directorate on Poultry to build their residential quarters in its campus. NAARM campus has recreation and sports facilities for its campus employees, residents and the trainees.

Human and Financial Resources

Human Resources (as on 31.03.2007)

Sl.No	Category	Sanctioned Strength	Posts Filled	Vacant Positions
1.	Research Management Positions	03	02	01
2.	Scientific	40	20	20
3.	Technical	55	49	06
4.	Administrative	44	43	01
5.	Supporting	40	39	01
	Total	182	153	29

Budget Allocation, Expenditure during the year 2006-07

Expenditure Statement - NON-PLAN (Rs. in lakhs)

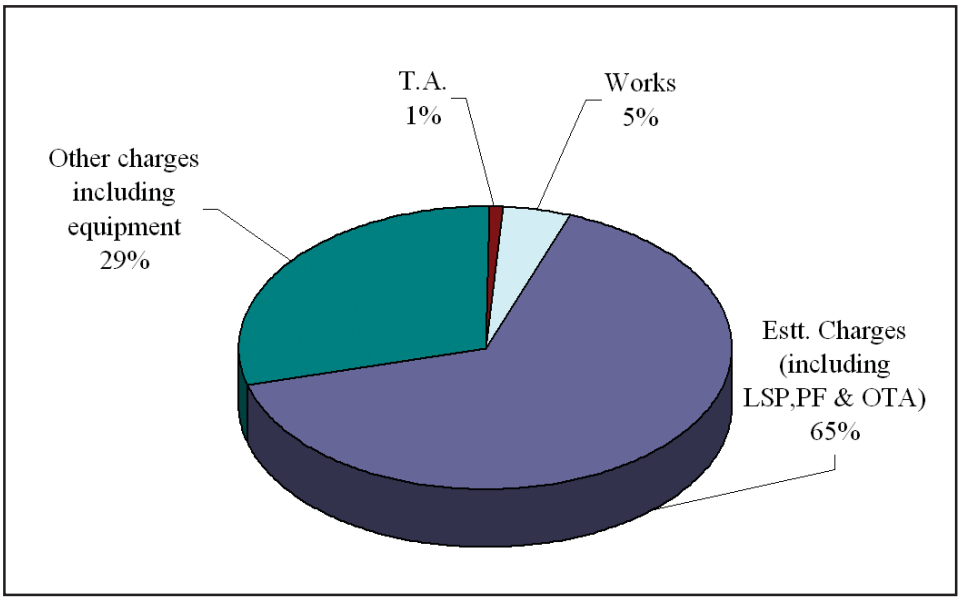
Sl.No	Head of Account	Budget Allocation for 2006-07	Expenditure during 2006-07
1	(a) Estt. Charges including LSP & PF	375.00	375.00
2	(b) OTA	0.60	0.60
3	T.A.	4.00	3.99
4	Other charges including equipment	169.40	169.39
5	Maintenance of Residential / Non-Residential bldgs including Petty Works	26.00	26.00
	Total	**575.00**	**574.98**

Sl.No	Head of Account	Budget Allocation 2006-07	Expenditure during2006-07
1	Pension & Retirement Benefits	47.00	47.00
2	Loans & Advances	5.00	5.00

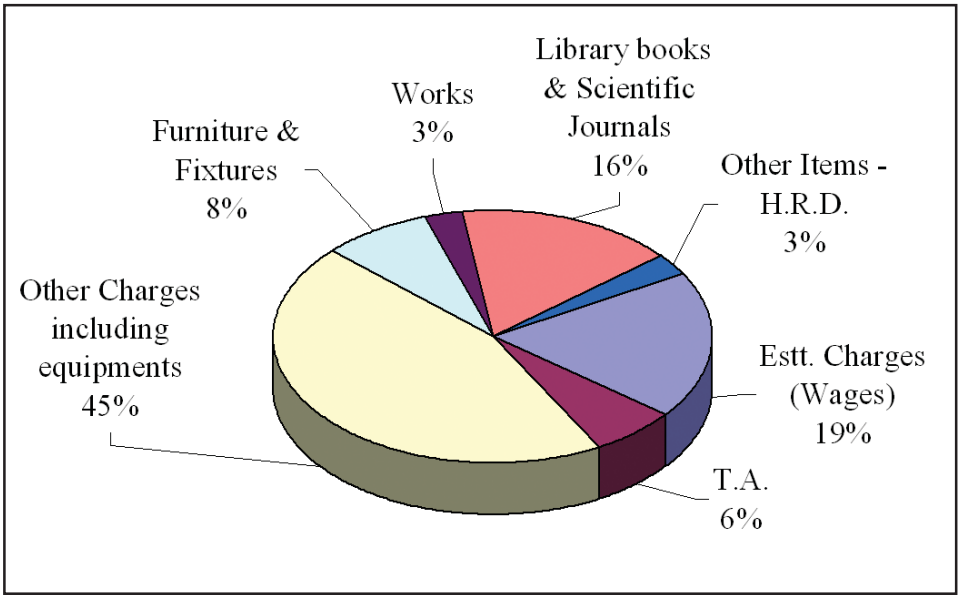
Expenditure Statement – PLAN (Rs. In lakhs)

Sl.No	Head of Account	Budget Allocation for 2006-07	Expenditure during 2006-07
1	(a) Estt. Charges	0	0
	(b) Wages	35.00	35.00
2	T.A.	11.80	11.78
3	Other Charges including equipments	83.20	83.19
4	Furniture & Fixtures	15.00	15.00
5	Library books & Scientific Journals	30.00	30.00
6	Works	5.00	5.00
7	Other Items - H.R.D.	5.00	5.00
	Total	**185.00**	**184.97**

Non-Plan Expenditure - 2006-07



Plan Expenditure - 2006-07



Capacity Building

NAARM

Annual Report 2006-07

Capacity Building

Capacity Building

Capacity building is the primary mandate of the academy. The academy imparts training in the areas of research and education management, information and communication technology, and administrative and finance management. Its client group includes scientists and faculty, administrative officers, executives, and senior research managers of the ICAR and SAUs, which form major subsystems of the National Agricultural Research System (NARS). During the reported period, a total of 62 such programmes including training programmes, workshops and orientation meetings were organized with 1,547 participants. A glimpse of the various types of programmes organized at the Academy is as follows.

Type of programme	No. of programmes	No. of participants
Foundation Course for Agricultural Research Service (FOCARS)	1	78
Foundation Course for AOs and FAOs	1	21
Refresher Courses/ Summer/ Winter Schools (21 days)	13	251
Senior Programmes	21	340
Workshops	9	368
Executive Development Programmes	2	36
Off-campus programmes	14	386
International Programmes	1	67
Total	**62**	**1547**

Foundation Course for Agricultural Research Service (FOCARS)

FOCARS the flagship programme of the Academy is designed for the newly recruited entry-level scientists in Agricultural Research Service of the ICAR. The course aims at providing exposure to the trainees on the concepts and principles of project management with special emphasis on project formulation and implementation.

Programme	Duration	No. of participants	Coordinator(s)
80th FOCARS	January 8 – May 7, 2007	78	A. Gopalam R. Kalpana Sastry K.H. Rao, and G.R.K. Murthy

The 80th Foundation Course for Agricultural Research Service (FOCARS) was inaugurated on January 8, 2007. The programme is meant for the newly recruited scientists in to Agricultural Research Service (ARS). The major focus of the foundation training is to provide an exposure to the trainees on the concepts and principles or project management with special emphasis on project formulation and implementation. The programme also includes capsules in important and related areas such as human resource management and information and communication management, all of which are aimed at making the scientists as good research workers.

The first phase of the programme, aimed at orientation and capacity building, was organized from January 8 to March 19, 2007. During the first phase the scientists were oriented to Indian agricultural research system, issues of WTO and IP-management, research project management, communication management, computer-based information technology, organizational behavioural issues, administrative and financial rules, and participatory rural appraisal techniques. During the second phase of the programme, the scientists undergo Field Experience Training (FET) in various centres of ICAR institutes/Agricultural Universities/ Krishi Vigyan Kendras, wherein they interact with farmers, extension agencies, input supplying agencies, scientists, and others to identify the problems and develop interdisciplinary research project. The second phase of the programme started from March 20, 2007. The third phase of the programme is scheduled to start from April 16 and the programme would be completed by May 7, 2007.

Foundation Course for Administrative Officers and Finance & Accounts Officers

Programme	Duration	No. of participants	Coordinator(s)
Foundation Course for Directly Recruited AO's & FAO's	July 19 – October 19, 2006	21	M. Suresh Kumar V.S. Subramanian

The main objectives of the programme were to provide an overview of the ICAR administrative set up and general financial and accrual accounting system in ICAR and other modern management principles; to strengthen the existing administrative management processes in ICAR Institutes through continuing training programmes; and to provide other modern management techniques.

It had four phases namely First Phase (July 19 to September 1, 2006); the Second Phase on Field Experience Training (September 2 to 21, 2006). The Third Phase was scheduled from September 22 to October 16, 2006, and the interactive work experience at ICAR headquarters in the Fourth Phase was from October 17 to 19, 2006. Phases I & III were scheduled at NAARM. The programme broadly covered administrative and establishment matters; financial management; human resources management; Indian agricultural scenario vs world agriculture; NARS and National Agricultural Education System; service matters; vigilance management and disciplinary matters; legal matters; procurement of goods and services (new General Financial Rules); Right to Information Act 2005; PERMISNET and I.R. System; computer applications and information technology. Twenty one directly recruited Administrative Officers and Finance and Accounts Officers of ICAR Institutes attended the programme.

B. Refresher Courses / Summer Schools / Winter Schools (21 days)

Programme	Duration	No. of participants	Coordinator(s) / Course Director(s)
Advances in Educational Technology	May 9 - 29, 2006	10	Jagannadham Challa M.N. Reddy
Summer School on Advances in Agricultural Research Project Management	June 1 - 21, 2006	26	T. Balaguru
Summer School on Participatory Video Production for Decision and Empowerment	June 7 - 27, 2006	19	N. Sandhya Shenoy
Summer School on Optimizing Learning Teaching in SAU System	June 20 - July 10, 2006	24	A. Gopalam
Summer School on GIS Based Decision Support Systems for Sustainable Agriculture	July 5 - 25, 2006	26	N.H. Rao
Computer-based Multimedia in Agriculture	July 14 - August 3, 2006	20	K.M. Reddy V.K.J. Rao
Summer School on Advances in Agribusiness and Information Technology	July 19 - August 8, 2006	26	G.P. Reddy

Winter School onTeam Building and Interpersonal Relationship for Agricultural Research Scientists and Teachers	September 6 - 26, 2006	17	M.M. Anwer
Information Technology in Agriculture for Effective Decision Support	October 4 - 24, 2006	12	MN Reddy G.R.K. Murthy
Winter School on Personality Development and Self-Motivation for Enhanced Performance of Agricultural Scientists and Teachers	November 8 - 28, 2006	21	P. Manikandan
Computer-based Multimedia Presentation(Sponsored by NICHE Area of Excellence in Educational Technology (ICAR)	February 21-March 12, 2007	18	K.M. Reddy V.K.J. Rao
FDP on Advances in Educational Technology (Sponsored by NICHE Area of Excellence in Educational Technology (ICAR)	February 21-March 13, 2007	22	Jagannadham Challa M.N. Reddy
GIS Based Decision Support Systems for Sustainable Agriculture	March 1 - 21, 2007	10	M.N. Reddy N.H. Rao

Advances in Educational Technology

A three-week Faculty Development Programme (6th in series) on Advances in Educational Technology was organized, exclusively for the teachers of UG and PG courses in State Agricultural Universities and ICAR deemed-to-be universities, from May 9 to 29, 2006. The programme aimed at developing need-based knowledge, skills, and competencies among teachers in educational technology and facilitated them to systematically apply the principles of instructional design and development in the planning and preparation of teaching modules and aids.

The programme focused on the three theme areas, viz., educational technologies and their application, innovative and modern learning approaches and processes, and personality development. Ten Assistant Professors and Associate Professors, involved in undergraduate and postgraduate teaching in Agricultural Universities, participated in the programme.

Summer School on Advances in Agricultural Research Project Management

With globalization and economic liberalization, coupled with the demands of intellectual property rights, researchers are faced with the problem of efficient

and effective management of their research projects. The research agenda should be in tune with the aspirations and circumstances of the stakeholders and the research efforts should lead to productivity gains in a sustained manner. This demands the researchers to acquire specialized skills with regard to planning and managing their research. Keeping this in view, a Summer School was organized from June 1 to 21, 2006, to orient the researchers to the future perspective of Indian agriculture and the changing global scenario, and to acquaint them with appropriate tools and techniques for efficient and effective management of research projects. The Summer School has benefited 26 scientists and teachers from ICAR institutes and SAUs.

Summer School on Participatory Video Production for Decision and Empowerment

Participatory video is being increasingly used in the system for information communication and dissemination to all its stakeholders. For speedy transformation of technology-based societies, information needs to be packed in digital video-based web environments. Learning and Capacity Building (L&CB) processes are complemented and supplemented through participatory video for decision-making and empowerment. Keeping this in view, a Summer School was designed and organized from June 7 to 27, 2006, with a view to orienting the participants to the latest developments in participatory information need assessment through PRA techniques, and to provide experiential learning to the participants on digital video production and its application for decision-making and empowerment in rural setting. The Summer School provided opportunities for the participants to familiarize themselves with video production tools and facilitated them integrate these tools to develop modules for information communication and dissemination. This Summer School benefited 19 scientists and faculty members from various ICAR institutes and SAUs.

Summer School on Optimizing Learning Teaching in SAU System

With the expertise developed by the Academy in conducting a series of training programmes for the faculty members of AU on Education Technology and Behavioural Psychology, a three-week Summer School on Optimizing Learning Teaching in AU System was initiated by the Academy on June 20, 2006. The major objectives of the programme were to enable the participants develop an awareness on philosophy of educational methodology and instructional technology, sensitize them to different methods of teaching and learning, and to facilitate them acquire an excellence in the development of instructional aids using computer and video. The programme focused on the two major themes, viz., management of agricultural education and instructional strategies, which were covered through interactive lectures, discussion, and hands-on-experience. This programme provided opportunity for participation and learning for 24 Assistant and Associate Professors of SAUs.

Summer School on GIS Based Decision Support Systems for Sustainable Agriculture

The summer school on GIS based Decision Support Systems for Sustainable Agriculture was organized from July 5 to 25, 2006 with the twin objectives of understanding and applying GIS tools in agriculture, and conceptualizing and developing a GIS based decision support framework for managing agricultural production systems for sustainability. The course was designed in 3 modules namely 1) Database, GIS and remote sensing and image processing concepts and practice 2) GIS based decision support systems for sustainable agriculture (analytical framework and case studies in mapping sustainability indicators in crop, crop-livestock and agrobiodiversity systems) 3) A special module on the low-cost indigenous GIS and image processing software GRAM++.

The programme succeeded in introducing the concepts of GIS and related spatial technologies like remote sensing and image processing and provided hands-on experience of GIS and related hardware and software, including the indigenous GIS software GRAM++. It also introduced relevant definitions, concepts, indicators and framework to formulate and resolve questions related to sustainability of agricultural production systems along with how to use GIS to characterize agricultural production systems for sustainability by appropriate sustainability indicators. The participants were able to conceptualize and design GIS based research programmes for agricultural sustainability and assess the institutional innovations required for implementing such programmes. Twenty six participants from various ICAR institutes and SAUs participated in the programme.

Computer-based Multimedia in Agriculture

The refresher course on Computer-based Multimedia in Agriculture was organized from July 14 to August 3, 2006 to develop an understanding and appreciation of use of multimedia in technology development and dissemination. The programme exposed the participants to digitizing, synthesizing, animating and packing image, sound, graphics, videos and text for both web and CD based presentations with many hands-on-experience training sessions. The trainees were familiarized with multimedia production tools in various categories and enabled to develop their own modules for Information Communication and Dissemination Systems (ICDS). Twenty scientists, faculty members and technical officers from ICAR institutes and SAUs took part in the course.

Summer School on Advances in Agribusiness and Information Technology

The summer school on Advances in Agribusiness and Information Technology was organized from July 19 to August 8, 2006. The broad objective of the programme was to improve the project management skills of the research scientists / teachers in the NARS. The summer school analyzed the future perspective of Indian agriculture in response to changing global agricultural scenario and acquainted the participants with appropriate tools and techniques for efficient and effective management of agribusiness and information technology. Twenty six participants from ICAR institutes and SAUs have undergone training.

Winter School on Team Building and Interpersonal Relationship for Agricultural Research Scientists and Teachers

The Winter school on Team Building and Interpersonal Relationship for agricultural research scientists and teachers was organized from September 6 to 26, 2006 at the Academy. The major objectives of the programme were to sensitize agricultural professionals to the issues of interpersonal relationships and team building in the organization; and to develop a good insight into the behavioural dynamics of self and others.

The programme enabled the participants to enhance their personal, interpersonal, and group effectiveness and also made them understand the importance and process of working together. It exposed the trainees to the theories and practices of interpersonal relationships and team building; and also developed awareness and improved the skills for effective management of people at work. The programme provided a platform to sharpen their skills to work well as a member of team and also as team leaders. Scientists from ICAR institutes and Assistant / Associate Professors from SAUs, numbering seventeen, attended the course.

Information Technology in Agriculture for Effective Decision Support

Refresher course on Information Technology in Agriculture for Effective Decision Support was organized from October 4 to 24, 2006. The programme reviewed and updated the latest trends in IT applications for information management in agriculture and tried to develop the suitable multimedia content development and presentation skills for effective decisions. It also sensitized the participants on the knowledge management and knowledge discovery through decision support systems for effective decisions along with data management and retrieval methods. Scientists, faculty members (Teachers) and technical officers from ICAR Institutes, SAUs / NGOs and other related organizations, numbering twelve, attended the programme.

Winter School on Personality Development and Self-Motivation for Enhanced Performance of Agricultural Scientists and Teachers

The Winter School on Personality Development and Self-motivation for Enhanced Performance of Agricultural Scientists and Teachers was organized at the Academy from November 8 to 28, 2006. The programme was aimed at developing personal effectiveness and motivational skills for enhanced performance by exploring one's personality and the methods of developing it. It also dealt with the concept of motivation and ways in which motivation is actuated in organizations. The programme was essentially experiential, comprising self-exploration instruments, interactive discussions, structured experiences, blend of presentations, and exercises, all of which provided an effective learning experience for the participants. Assistant / Associate Professors from SAUs, numbering twenty one, took part in the Winter School.

Computer-based Multimedia Presentation

Over the years, interactive digital video, imaging, digitizing, scanning, and other computer graphic technologies have paved way for developments in multimedia. Various tools and software also contribute significantly in multimedia product development. Learning and capacity building processes as well as transformation of technology are supplemented and complemented through multimedia. There is an arising need to build the capacity of scientists and teachers

working in the system in the important areas of multimedia basics, tools, software, and multimedia module development. With this backdrop, a refresher course on Computer-based Multimedia Presentation was organized from February 20 to March 12, 2007, under the Niche Area of Excellence in Educational Technology. With the diverse activities such as interactive lectures, demonstration, and hands-on experience incorporated in the training methodology of the programme. The participants, numbering eighteen, were facilitated to develop expertise in multimedia module development and multimedia presentations.

FDP on Advances in Educational Technology

Under the Niche Area of Excellence in Educational Technology, sponsored by ICAR, a Faculty Development Programme on Advances in Educational Technology was organized from February 21 to March 13, 2007 for the benefit of the faculty members of Agricultural Universities. The programme was aimed at developing need-based knowledge, skills, and competencies among teachers for agricultural education and to facilitate them enhance their teaching effectiveness. The programme addressed three important theme areas, which covered educational technologies and their application, innovative and modern learning approaches and processes, and personality development. These three areas encompassed educational technology and teacher development, which are crucial for the enhancement of teaching-learning effectiveness. The programme also facilitated the participating faculty members to look at the course material of one UG course they handle and the examination paper set for the course, with a view to provide them an opportunity to understand the issues that help enhancing the course material and the evaluation process. Twenty two faculty members from 11 Agricultural Universities attended the programme to learn the principles, practices, techniques, and tools in educational technology for effective application in the back-home situation.

GIS Based Decision Support Systems for Sustainable Agriculture

The National Agricultural Policy as well as the Vision and Mission statements of ICAR emphasize the importance of sustainability in agriculture. Sustainability is a complex issue to address as it encompasses technological, social, economic, and ethical dimensions. All these factors vary spatially and in time. Addressing sustainability concerns, therefore, requires integrating large and diverse spatial data sets of natural resources, socio-economic conditions, and crop and livestock resources and their management. Geographical Information Systems (GIS) provide an effective framework to integrate such diverse spatial data sets into decision support systems that help define and resolve the complex issues related to sustainable management of agricultural production systems. There is, therefore, a growing need to build the capacity of NARS in making effective use of GIS-based technologies in agricultural research and management.

This training programme, organized from March 1 to 21, 2007, was designed with the twin goals of understanding and applying GIS tools in agriculture and to develop decision-support framework for managing agricultural production systems for sustainability. The programme was organized in four modules comprising database and GIS concepts and practice, remote sensing and image processing concepts and practice, sustainability concepts, analytical framework and GIS-based indicators and information systems for sustainability, and GIS-based decision support systems for sustainable agriculture. Ten scientists and teachers from various ICAR institutes and agricultural universities attended the programme, which provided a lot of hands-on experience with GIS tools and software.

Senior Programmes

Programme	Duration	No. of participants	Coordinator(s)
MDP in Agricultural Research	April 19 - 25, 2006	07	Jagannadham Challa K.H. Rao
Developing Winning Research Proposals in Agricultural Research	April 27 - May 2, 2006 October 9 - 13, 2006	26 17	D. Rama Rao Jagannadham Challa
Karya Kushalata Evam Samsthaneeya Tanav Par Rastriya Samghosti	May 16, 2006	27	J. Renuka A. Gopalam
Gahan Prashikshan Va Karyashala	June 2 - 7, 2006 February 1 - 6, 2007	23 22	J. Renuka S. Pradeep Singh A. Gopalam
IT sensitization programme for Finance Officers/ Officials of ICAR (under NAIP)	June 5 - 9, 2006 June 13 - 17, 2006 June 20 - 24 June 27 - July 1, 2006	13 18 17 12	M.N. Reddy K.M. Reddy G.R.K. Murthy D. Rama Rao K.V.S. Rao V.K.J.R. Rao
Leadership and Personality Development	June 14 - 20, 2006	10	P. Manikandan M.M. Anwer
MDP on Managing Intellectual Property in Agricultural Research Organizations	July 13 - 19, 2006	23	S.K. Soam R. Kalpana Sastry
WTO and its Implications on Agriculture for the Senior Officers of the Govt. of Madhya Pradesh	August 23 - 29, 2006	07	R. Kalpana Sastry S.K. Soam
WTO and its Implications on Agriculture for the Officers of Department of Agriculture, Govt. of AP	September 11-16, 2006 September 25-30, 2006 October 30 - November 4, 2006 November 13 - 8, 2006	25 22 22 17	R. Kalpana Sastry T. Balaguru S.K. Soam
Participatory Rural Appraisal and Participatory Learning and Action Techniques for Research & Extension in Agriculture	October 6 - 18, 2006	07	V.K.J. Rao N. Sandhya Shenoy
Managing Video Production	December 12 - 23, 2006	12	Janardhan Rao Cheeli N. Sandhya Shenoy
Performance Assessment of Agricultural Research Organizations	January 4 - 9, 2007	07	T. Balaguru R. Kalpana Sastry R.V.S. Rao
Stress Management Strategies for Organizational Effectiveness	February 15 - 21, 2007	06	K.H. Rao P. Manikandan

MDP in Agricultural Research

A Management Development Programme in Agricultural Research was organized from April 19 to 25, 2006, with a view to developing competencies among the middle-level functionaries in the system on various issues related to management of project, people, and resources in the organization. All the four areas, viz. research management, human resource management, administration and financial management, and information and communication management, were discussed through experiential learning process and major issues for their effective management were brought out. Seven Heads of the Departments from different ICAR institutes and SAUs participated in the programme.

Developing Winning Research Proposals in Agricultural Research

Researchers in the system need to be facilitated to develop skills for writing winning research proposals. This assumes greater importance in the wake of shrinking resources for research and the need to bring in more of external-funded projects. For developing winning research proposals, the researchers need to be equipped to develop creative research ideas, a good project design, and a budget estimate that is rationally accepted. In order to provide opportunities for the researchers to develop the needed skills, two programmes on Developing Winning Research Proposals in Agricultural Research were organized from April 27 to May 2, 2006 and October 9-13, 2006. The programme facilitated the participants to develop skills in writing a concept note and to write research proposals to inform and persuade the donors. Forty three middle-and junior- level researchers working in the ICAR institutes and SAUs attended the programme.

Karya Kushalata Evam Samsthaneeya Tanav Par Rastriya Samgosthi

One day National Seminar in Hindi on "Unnat Karya Kushlata hetu Samekit Sansthaneey Tanav Prabhandan" was conducted on May 16, 2006, in which twenty seven officials comprising scientists and technical officers participated. The seminar consisted of presentations, which included invited papers, besides an overview on the theme by Dr S. Prakash Tiwari, Director. This presentation facilitated a thorough discussion on stress and the causative and remedial factors of stress-related problems. Four papers on stress management were presented. The presentations brought out

some of the following issues. The organizational stress was attributed to the environmental variations, varied interests, aspirations of the individuals, and the competitiveness within organizations. The responsibility for stress in individuals is attributed to ill health of self and family members, communication disability, negative thinking, and bad habits including addiction. The disciplined life-style imposed and adopted reduces the stress quantum and enables individuals to lead a happy life. The seminar brought out inferences and conclusions for managing the organizational stress and improving the work efficiency.

Gahan Prashikshan Va Karyashala

Two programmes in Hindi titled *Gahan Hindi Prashikshan va Karyashal*a were conducted from June 2-7, 2006, and February 1-6, 2007 for the technical officers of ICAR research institutes. The training was imparted on intensive use of Hindi in day-to-day official functioning. The stress was made on the provisions of Official Language Policy of Government of India, other mandatory requirements under Section 3(3), and on noting and drafting. These programmes sensitized the participants on the use of Hindi in office and also equipped them with the required knowledge and skills that would help them to use Hindi more effectively in the official work. Forty five technical officers from ICAR institutes attended these programmes.

IT sensitization programme for Finance Officers/ Officials of ICAR

To fulfill the Govt. of India's objectives, as expressed in India's National Policy on Agriculture, the ICAR has initiated NAIP, which accords high priority to generation and transfer of agricultural technologies and suggests innovations in the technology system. Under NAIP, four training programmes of five days duration each were organized during the period from June 5 to July 1, 2006 for Finance officials of ICAR institutes. These programmes aimed at sensitizing them to the concepts of NAIP and to the scope and possibilities of using IT tools in financial management. These programmes covered various aspects, which included the basic operations of desktop computers with Windows Operating System, use of MS-Office package with emphasis on MS-Word, MS-Excel, and MS-Access, use of Internet, E-mail for information acquisition and communication, and background of latest financial packages including some exposure to ERP software. In all, sixty finance officers of various ICAR institutes could draw benefit out of these programmes.

Leadership and Personality Development

A complex array of knowledge, skills, and abilities appears to constitute effectiveness of leadership. The present leadership literature, with its focus on effective leaders, revisits personal traits, leader behaviour, and leadership situation as determinants of leadership abilities. It is, therefore, important to understand the impact of personality traits, the individual behaviour of effective leaders, and the situation variables in making the organizational leadership successful. To explore the concept of leadership and the ways in which leadership is exercised in modern times, a programme on Leadership and Personality Development was organized from June 14 to 20, 2006, which aimed at equipping the researchers and teachers in the National Agricultural Research System with the knowledge and tools that would help them identify personal impediments to develop effective leadership capacities. The programme provided a forum for the participants to explore ideas on personality and leadership development for different situations. Ten middle-and junior- level researchers working in the ICAR institutes and SAUs attended the programme.

MDP on Managing Intellectual Property in Agricultural Research Organizations

The Management Development Programme on Managing Intellectual Property in Agricultural Research Organizations was organized from July 13 to 19, 2006. The main objectives of the course were to strengthen the knowledge of agricultural scientists in the area of Intellectual Property Rights with respect to national and international scenario; and to develop competency among these scientists to face IPR challenges through appropriate technology development and protection. As a part of course curriculum, an innovative farmer gave a live demonstration of technologies. For the first time a platform was arranged for understanding processes of the protection of farmers' innovation involving the National Innovation Foundation (NIF), Ahmedabad and Andhra Pradesh Honey Bee network. Twenty three participants, a mixed group from public and private organizations attended the programme.

WTO and its Implications on Agriculture

The Academy signed an MOU with the Department of Agriculture, Government of Madhya Pradesh. Accordingly, training programmes on "WTO and its Implications on Agriculture" was organized for seven senior officers of government of Madhya Pradesh from August 23 to 29, 2006 where

in the programme sensitized the officials to the implications of various international agreements in the post-WTO regime on Indian agriculture and the consequent policy and institutional imperatives for agricultural research systems. The programme also introduced the appropriate instruments and methods for dealing with the WTO concerns and IPR issues for the betterment of farmers and farming in Madhya Pradesh.

WTO and its Implications on Agriculture for the Officers of Department of Agriculture, Govt. of AP

As a part of training consultancy with Department of Agriculture, Govt. of Andhra Pradesh, four training programmes on WTO and its Implications on Agriculture were organized from September 11 to 16, 2006; September 25 to 30, 2006; October 30 to November 4, 2006 and November 13 to 18, 2006. Eighty six agriculture officers of Department of Agriculture, Govt. of AP. were trained.

The main purpose of these training programmes was to create awareness about the WTO, its basic rules and disciplines, functioning and its implications on Indian agriculture in general and on agricultural development in Andhra Pradesh in particular. The trainees were exposed to specialized areas such as i) Introduction to multilateral trading systems and establishment of WTO; ii) Relevant agreements to agriculture including AoA, SPS/TBT and TRIPS, Antidumping, etc.; iii) Protection systems of various forms of Intellectual Property (IP) like Patents including Patent Cooperation Treaty (PCT), Geographic Indications (GI), Protection of Plant Varieties and Farmers' Rights (PPV&FR), Copyrights, Designs, Trademarks, and Trade Secrets in India; iv) Biodiversity conservation, documentation and sharing, and Mechanism for protection of ITK and biological resources; v) Policy issues associated with IP Management; and vi) Brainstorming sessions on issues and concerns for agricultural development under new developments.

Participatory Rural Appraisal and Participatory Learning and Action Techniques for Research & Extension in Agriculture

The training programme on Participatory Rural Appraisal (PRA) and Participatory Learning and Action Techniques for Research & Extension in Agriculture was conducted from October 6 to 18, 2006. The application of rapid and participatory rural appraisal techniques for the purpose of agricultural research and extension is gaining momentum of late. In order to impart the required skills to the participants in using various PRA techniques in Research-Extension-Farmer (REF) systems and to understand various PRA techniques and their importance in REF systems the programme was conducted. It enabled the trainees in synthesizing the PRA techniques and project preparations for research and extension. Seven Scientists and faculty from ICAR, SAUs, KVKs and State Departments of Agriculture attended the course.

Managing Video Production

The training course on Managing Video Production was organized from December 12 to 23, 2006.The programme aimed at developing skills in the production of educational video programmes creatively and also managing video production on agricultural topics while understanding the technological advancements in video production. Twelve technical staff and scientists / faculty members interested in the production of educational video materials from ICAR, State Agricultural Universities took part.

MDP on Performance Assessment of Agricultural Research Organizations

With the increased demand on accountability, agricultural research organizations need to be equipped with a realistic methodology for assessing the performance in a comprehensive way. With a view to providing opportunities for the participants to have an exposure to identify and measure suitable indicators as well as to assess the performance of research organizations in NARS, a Management Development Programme on Performance Assessment of Agricultural Research Organizations was organized from January 4 to 9, 2007. The programme was build around the major topics such as performance-oriented evaluation system, measurement of research output and outcome, and assessment of research management process. The programme equipped the participants with the principles and methodology needed for undertaking performance assessment in their respective institutes. Seven scientists from ICAR, and SAUs attended the course.

Stress Management Strategies for Organizational Effectiveness

Scientists and teachers working in the NARS are often faced with organizational stress, due to a variety of reasons. In order to enhance the efficiency and effectiveness, scientists and teachers need to understand the sources of stress in the organization and also the techniques of moderating the individual stress level. Keeping this in mind, the Academy organized a Senior-level Course on Stress Management Strategies for Organizational Effectiveness from February 15 to 21, 2007. The programme provided ample opportunities for the participants to understand the stress process, the concept of organizational

stress, and the techniques for management of occupational stress. The participants were equipped with various tools and strategies that would help them cope up with stress in the organization. Six senior-level scientists and teachers from the NARS system attended the programme.

Workshops

Programme	Duration	No. of participants	Sponsoring agency	Coordinator(s)
Right to Information Act 2005	April 18 - 19, 2006 April 25 - 26, 2006	44 48	ICAR	G.R.K. Murthy R.V.V.S. Prakasa Rao
National Workshop on Training Needs Assessment for Learning and Capacity Building (L&CB) Under NAIP	June 20 - 21, 2006	41	NAIP	R.K. Samanta K.V.S. Rao B.S. Sontakki
Induction Workshop-cum-Training on Development of Research Proposals in Public-Private Consortia mode (Under NAIP)	June 27 - 30, 2006	44	NAIP	Jagannadham Challa D. Rama Rao
Improving Personality Profile and Human Communication in Organizations	August 1 - 5, 2006	10		R.K. Samanta B.S. Sontakki
NAIP Awareness Building Workshop	August 12, 2006	72	NAIP	T. Balaguru
Sensitization Workshop on ICT Projects Under NAIP	September 4 - 5, 2006	33	NAIP	D. Rama Rao
Data Analysis and Data Mining(NAARM and SORM)	February 26, 2007	59		D. Rama Rao M.N. Reddy
Curriculum Design and Development in Arising Contexts	March 16 - 20, 2007	17		A. Gopalam K.H. Rao

Right to Information Act 2005

The Right to Information (RTI) Act is a very powerful tool to bring transparency and usher in an era of accountability. It empowers people to get information, records, etc. of government authorities as a matter of right. There are two main stakeholders in provision of information, the information seekers, i.e. citizen, and the information providers, i.e. public authorities including government-funded NGOs. Two workshops on Right to Information Act, 2005, were organized at the Academy from April 18 - 19, and April 25 - 26, 2006, respectively. These were essentially organized with a view to sensitizing Public Information Officers

(PIO) and Assistant Public Information Officers (APIO) of ICAR system, on the provisions of Right to Information Act, 2005.

While inaugurating the first workshop, Dr P. Venkateswara Rao, Former Chairman, AP Press Academy, Hyderabad, said that the Right to Information Act is truly a historic legislation. It is legislation for the have-nots. The RTI Act, 2005, is a comprehensive legislation that would confer statutory rights on citizens for seeking information from public authorities. The Act is expected to bring in a new era of governance and promote more transparency and accountability, he added. While delivering the Presidential address, Dr S. Prakash Tiwari, Director, NAARM, said that the new law has a potential to usher in a beginning for more inclusive socio-economic development by providing impetus to the development process. He pointed out that the law can bring transparency, accessibility, and accountability and can combat chronic disease of corruption, if the citizens use it intelligently and effectively. Dr R.K. Samanta, Joint Director, NAARM, said that the Government of India, after 58 years of independence, gave its citizens the right to know with the Right to Information Act, 2005.

In his inaugural address, during the second workshop, Dr C.V. Narasimha Reddi, Former Director, Department of Information and Public Relations, Government of Andhra Pradesh, said that the Right to Information is vital for the survival of democracy. With the Right to Information Act, collective concern should be at the survival of our democratic nation, he added.

These workshops covered various aspects, which included provisions of the RTI Act, case studies on RTI Act pertaining to research and development, enactment of RTI Act on organizational web pages, obligations of public authorities and duties of PIOs to implement the Act, and ensuring preparedness to comply in ICAR.

The participants were taken through an interactive process that facilitated a thorough understanding of the relevant sections under the Act. The workshop provided a forum to bring about clarifications on various issues, which included request for obtaining information, disposal procedure of requests, issues covered under exemption from disclosure of information, third party information, and penalties levied.

Public Information Officers and Assistant Public Information Officers in the ranks of Joint Directors, Principal Scientists, Senior Scientists, Technical Officers, Administrative Officers, and Finance and Accounts Officers from various ICAR institutes, numbering 92, participated in these two workshops.

National Workshop on Training Needs Assessment for Learning and Capacity Building (L&CB)

In agricultural research, the limited ability of stakeholders for interaction and transaction has been identified as one of the key constraints in the generation and dissemination of knowledge. Keeping this in view, NAIP has introduced "consortium" approach (i.e. public-private partnership of service providers that collaboratively addresses production-systems constraints) as the principal modality for project implementation. Keeping in view the need to build the critical capacity of the ICAR as a catalyzing agent for management of change in the Indian NARS, a national Workshop on Training Needs Assessment for Learning and Capacity Building (L&CB), under NAIP, was organized on June 20 and 21, 2006, in the brainstorming-mode. The workshop was aimed at finding out the learning and capacity building needs of the personnel engaged in research, teaching, and extension.

Inaugurating the workshop, Dr Mruthyunjaya, National Director, NAIP, New Delhi, said that agricultural research and extension system has to continuously respond to the emerging needs, viz. science for excellence, science for commerce, and science for society. He stressed the need to orient the human resources of the National Agricultural Innovation System (NAIS) on these issues, by meaningful and need-based capacity building programmes. Scientists and teachers from Agricultural Universities (AUs), ICAR institutes, NGOs, and private organizations, who are involved in NAIP project, numbering forty one, participated in the workshop.

Development of Research Proposals in Public–Private Consortia

The Workshop on Development of Research Proposals in Public Private Consortia mode for NAIP was organized from June 27 to 30, 2006. The workshop aimed at sensitizing the scientists on developing research proposals that can win funds from donors. The programme provided much-needed information about modern concepts in proposal writing and other aspects related to development of convincing winning proposals and other aspects related to development of

convincing winning proposals for research projects in a network or consortium mode. Forty four senior executives from NARS (ICAR, SAUs, private R & D Organizations and NGOs) attended the workshop.

Improving Personality Profile and Human Communication in Organizations

The workshop on "Improving Personality Profile and Human Communication in Organizations" was organized at the Academy from August 1 to 5, 2006. The main objectives of the workshop were to improve individual's profile of personality in achieving excellence in individual's personal and professional endeavour; to study the state-of-the-art human development principle in accomplishing the set objectives in life; to discuss and describe technological innovations of instruction and role of media in the instructional process; to expose the participants about effective planning and programme formulation in bringing individual and organizational change in desired direction.

The workshop designed innovatively where both the participants as well as learners provided the participants an excellent opportunity to exchange views, share each other's experience and learn from one another. It included a blend of lectures, interactions / discussion, facilitations, exercises, simulation, games and experiential learning. Planned in a thematic manner, it was structured on the issues like profile of personality to achieve and accomplish; get what you want out of life; meaningful communication for experiential learning; effective presentation techniques for scientific communication; human communication in organizations for change and development in individuals and organizations; self managing leadership to motivate and inspire; using inner rhythm to communicate to win.

The workshop helped the participants in understanding effective management and coordination through meaningful communication among the people and organizations and also capacity building in individuals to perform meaningfully in tune with the changing life styles to achieve and accomplish their professional endeavours. Ten participants from SAUs, ICAR institutions and KVKs took part in the workshop.

NAIP Awareness Building Workshop

Towards sensitizing various potential stakeholders, both in public and private sector, on the concept and implementation of NAIP in the country, the PIU

has planned to organize a series of sensitization workshops in different parts of the country. The first one-day stakeholder sensitization workshop of NAIP was organized at NAARM on August 12, 2006. Dr Mruthyunjaya, National Director (NAIP), New Delhi, inaugurated the workshop and apprised the partnering institution representatives on the basic philosophy and implementation strategy of NAIP. Building on "Science with Social Commitment" as the vision of NAIP, Dr Mruthyunjaya elaborated on various strategic initiatives included in the project to contribute to double the agricultural growth rate, enhance the profitability, sustainability and competitiveness, and to ensure livelihood security of farmers. NAIP is an end-to-end problem-solving project using mostly consortium approach to reposition the research to address the business and developmental challenges, he added. He emphasized that the project aims to both creation and commercial use of new/existing knowledge or ideas.

The modalities and responsibilities in the campaign programme for NAIP were also streamlined in the workshop. It was decided that NAARM would act as a Help Desk in partnership building and to facilitate the prospective partners in preparing appropriate research proposals for competing for NAIP funds. Seventy two delegates from ICAR institutes, NGOs, R&D institutions, and private organizations took part in the workshop.

Sensitization Workshop on ICT Projects Under NAIP

Project Implementation Unit of NAIP has entrusted the task of preparing proposals under e-learning and knowledge management components of Information and Communication Technology (ICT) to the Academy. The workshop was organized on September 4 - 5, 2006 to prepare proposals by select SAUs and ICAR institutes as deliverable modules within one and half years, with a scope to revise and extend further based on the progress and subsequent need assessment that is likely to be completed by then.

Seven ICAR institutes and nine SAUs participated in the workshop. A brief write-up on the needed ICT modules and guidelines for proposals, format to prepare the proposals and time schedule were sent to the selected ICAR institutions/SAUs. In all, 33 participants from SAUs, ICAR and other organizations, including private sector, participated in the workshop.

Data Analysis and Data Mining

A one-day workshop on data analysis and data mining was organized at the Academy on February 26, 2007, to sensitize the researchers on recent developments in information technology and statistical analysis for more effective research output. The workshop facilitated brainstorming on the major themes such as overview of developments in information technology and statistical data analysis, developments in computer intensive and interactive exploratory data analysis, and statistical methods for knowledge discovery in databases (data mining) and their potential applications in research. The workshop was organized in association with M/s SPSS Inc., Bangalore, and Society for Research Management (SORM), NAARM, Hyderabad. Fiftynine researchers from various institutions of NARS took part and contributed to its success by presentation of invited and contributed papers.

Curriculum Design and Development in Arising Contexts

Agricultural profession being technologically savvy, well-groomed agricultural graduates are needed to be produced in higher education institutions, gradually shifting their focus from being agents of the government who discharge traditional educational functions as a social service, to becoming key players in the knowledge industry with direct social responsibilities. In order to sensitize key functionaries of the agricultural universities on this need and to provide them a platform for discussing various issues related to this important change management, a workshop on Curriculum Design and Development in Arising Contexts was organized from March 16 to 19, 2007, for the senior faculty members of Agricultural Universities. During the workshop, three key presentations on design, process, and utility aspects of curriculum were made, respectively, by Dr S.L. Mehta, Vice Chancellor, MPUAT, Udaipur; Dr Sudarshan Reddy, Dean (Agriculture), ANGRAU, Hyderabad; and Dr S. Kannaiyan, Chairman, National Biodiversity Authority, Chennai. The participants presented experience-based papers on the theme of the workshop, which contributed to the successful outcome. Seventeen faculty members from various Agricultural Universities attended the programme.

Executive Development Programme

Programme	Duration	No. of participants	Coordinator(s)
Special Training programme on Vigilance Administration and Management (for ICAR Institutes Directors)	September 18-20, 2006 at NAARM, Hyderabad. December 5-7, 2006 at NDRI, Karnal.	17 19	R.K. Samanta M. Suresh Kumar M. Suresh Kumar Susheel Kumar

Special Training programme on Vigilance Administration and Management

Two special training programmes on "Vigilance Administration and Management" were organized for the Directors / Project Directors / Joint Directors of ICAR research institutes from September 18 to 20, 2006 and December 5 - 7, 2006, with the support of Central Vigilance Commission.

All research institutes had codified conduct rules, and the violation of which is to be administered as per Discipline and Appeal Rules. The intention of ICAR is to familiarize the Directors of the research institutes with vigilance administration and disciplinary matters of Govt. of India *mutatis-mutandis* applicable to ICAR. Hence, there is a need to involve Directors of the research institutes in the discussions in order to avoid administrative delay in settling the disciplinary matters. Therefore, the programme also intended at improving the efficiency on vigilance administration and taking appropriate actions on anonymous and pseudonymous complaints and matters related to procurement processes from vigilance angle.

Some of the key areas covered under this programme included: Organization renewal for change and development; vigilance administration and management facets and ethical values; the role of Central Bureau of Investigation; prevention of sexual harassment at workplace; holding of preliminary and regular enquiries and functions of Central Vigilance Commission and the role of disciplinary authorities; suspension – scope and purpose – entitlement, etc. Seventeen Directors / Project Directors / Joint Directors of ICAR Research Institutes located in Andhra Pradesh, Karnataka, Tamil Nadu, Kerala, Goa and Maharashtra, and Nineteen Directors from the states of Jammu & Kashmir, Himachal Pradesh, Punjab, Haryana, Uttaranchal and Rajasthan took part in these two programmes

Off-Campus Programmes

Programme	Duration	No. of participants	Coordinator(s)
FDP in Educational Technology and Research Project ManagementAt TNAU, Coimbatore	April 6 - 11, 2006	30	Jagannadham Challa
Mechanism for Protection of Intellectual Property in North East and West BengalAAU Guwahati, Assam	April 18 - 22, 2006	45	T. Balaguru R. Kalpana Sastry
FDP in Educational Technology At TNAU, Coimbatore	June 5 - 9, 2006	30	Jagannadham Challa
Specialized Short Course on Improving Efficiency of Scientific and Technical Manpower for the Officials of NRC on Agroforestry, and IGFRI, Jhansi	August 21 - 24, 2006 September 25 - 28, 2006 November 29 - December 2, 2006	28 25 25	P. Manikandan M.M. Anwer S.K. Soam
Specialized Short Course on Improving Efficiency of Administration, Finance & Accounts Manpower for the Officials of NRC on Agroforestry, and IGFRI, Jhansi	August 22 - 26, 2006 September 25 - 28, 2006	22 25	R.V.S. Rao M.M. Anwer
Administration and Finance Management for the officials of ICAR Research Complex for Goa, Ela, Old Goa	September 4 - 7, 2006	24	M. Suresh Kumar B.S. Sontakki
Specialized Short Course on Implications of WTO Agreements on Agriculture for the Senior Officers of Department of Agriculture, Madhya Pradesh	October 11 - 12, 2006	32	S.K. Soam R.Kalpana Sastry
Human Relations Management at Work organized at Patna, for Scientists and Technical Officers and for Administrative and Accounts Personnel	February 5 - 7, 2007 February 6 - 8, 2007	25 25	M.M. Anwer P. Manikandan
FDP on Educational Methodology and Instructional Technology at UAS, Dharwad (under Niche Area Project)	February 19 - 25	25	A. Gopalam K.H. Rao B.S. Sontakki
Enhancing Human Capabilities at Work at CRIDA, Hyderabad	March 12 - 17, 2007	25	M.M. Anwer P. Manikandan

FDP in Educational Technology and Research Project Management

Value-based agricultural education has been gaining importance over time. There is, therefore, a need for bringing about change in the attitude and behaviour of learners, teachers, and administrators of agricultural education, with an emphasis on building up a strong foundation of value system. Keeping this in view, a Faculty Development Programme in Educational Technology and Research Project Management was organized at Tamil Nadu Agricultural University (TNAU), Coimbatore, from April 6 to 11, 2006, to facilitate the teachers to develop the needed knowledge and skills in the important areas of educational technology and research project management. The programme covered broad areas such as educational technologies and their application, innovative and modern teaching approaches and processes, personality development, developing winning research proposals, research prioritization, and monitoring and impact assessment. This programme benefited 30 faculty members who are involved in PG teaching at TNAU.

Protection of Intellectual Property

At the instance of Education Division of ICAR, a need-based, tailor-made, off-campus programme on 'Mechanisms for Protection of Intellectual Property in North-East and West Bengal' was organized for the researchers from the Agricultural Universities in North-East and West Bengal, at the Assam Agricultural University Campus, in Guwahati, from April 18-22, 2006. The programme aimed at equipping the participants with relevant information on various aspects of Trade Related Intellectual Properties (TRIPS) Agreement by exposing them to basic rules, disciplines, functioning, and implications to researchers.

In the programme, various mechanisms for the protection of intellectual property in terms of patents, plant varieties and farmers' rights, geographic indications, copyrights, designs, trademarks, and trade secrets, including the regulatory procedures for agro-biodiversity protection were presented and analysed for their applicability to these two regions bestowed with rich agro-biodiversity. Besides the four core faculty members from the Academy, one research manager from the ICAR Headquarters handled different topics. Forty five middle and senior-level researchers from various campuses of the Assam Agricultural University, Central Agricultural University, Bidhan Chandra Krishi Viswavidyalaya, and Uttar Banga Krishi Viswavidyalaya attended the programme.

FDP in Educational Technology

A five-day Faculty Development Programme in Educational Technology was organized from June 5 to 9, 2006, for the UG teachers of Tamil Nadu Agricultural University (TNAU), at Coimbatore, to enhance the knowledge, skills, and

competencies of undergraduate teachers in the area of educational technology and to enhance their capabilities in the use of computers in educational technology. The key contents of the programme included educational technologies and their applications, personality development of teachers, teaching effectiveness, student's assessment and evaluation, and information technology. Thirty teachers of TNAU, from ten campuses, were trained through this programme.

Improving Efficiency of Scientific and Technical Manpower

Specialized Short Course on Improving Efficiency of Scientific and Technical Manpower for the Officials of NRC on Agroforestry, (August 21-24, 2006) and IGFRI, Jhansi, (September 25-28, 2006 and November 29 - December 2, 2006) were organized to provide knowledge and skills to the participants on various issues that help improve their efficiency and effectiveness in the organization and develop an action plan for self and organizational development. Seventy eight scientific and technical officers were benefited through these programmes.

Improving Efficiency of Administration, Finance & Accounts Manpower

Specialized Short Course on Improving Efficiency of Administration, Finance & Accounts Manpower for the Officials of NRC on Agroforestry, (August 21-24, 2006) and IGFRI, Jhansi (September 25-28, 2006) were organized to appraise participants in changing scenario and trends in administration, finance, accounts and audit; and to sensitize the self and change the mindset to evaluate the efficiency and effectiveness for achieving objectives of their organizations. Fortyseven officers were benefited through these programmes

Administration and Finance Management

Programme on Administration and Finance Management for the officials of ICAR Research Complex for Goa, Ela, Old Goa was organized from September 4 to 7, 2006 to improve the skills and efficiency of the personnel in discharging their functions and providing constructive administrative support to their superiors in meeting the organizational priorities and needs. Twenty four officers got benefited through this programme.

Implications of WTO Agreements on Agriculture for the Senior Officers of Department of Agriculture

A specialized course on Implications of WTO Agreements on Agriculture was organized from October 11 to 12, 2006 for Department of Agriculture, Govt. of Madhya Pradesh, Bhopal. The programme was innovatively structured so that every lecture invoked the critical thinking for the development of the farmers and farming in the state and also linkage of theory lectures and technical interaction to the practical situation in the Madhya Pradesh state was ensured through in-built mechanisms in the training lectures. To make training more trade-oriented, the faculty were invited from Indian Institute of Foreign Trade, Delhi, MP Government, and Joint Director General, Foreign trade, Govt. of India also delivered a lecture. 32 officers of various cadres of Department of Agriculture, Govt. of Madhya Pradesh took part in the training programme.

FDP on Educational Methodology and Instructional Technology

A Faculty Development Programme on Educational Methodology and Instructional Technology was organized from February 19 to 25, 2007, at University of Agricultural Sciences, Dharwad. The programme was aimed at enhancing the need-based knowledge, skills, and competencies in educational technology among teachers and to facilitate them to systematically apply the principles of instructional design and development in the planning and preparation of teaching modules and aids. The programme was conducted under the project titled "Niche Area of Excellence on Educational Technology for Global Competitiveness in Agricultural Education". The programme had the participation of twenty five faculty members from various agricultural universities, which included a sizeable number from UAS, Dharwad.

Human Relations Management at Work

Two Off-campus programmes on Human Relations Management at Work were organized at ICAR Research Complex for Eastern Region, Patna, one specifically for scientists and technical officers, and the other for administrative and accounts personnel. The first programme was conducted from February 5 to 7, 2007, and the second programme was conducted from February 6 to 8, 2007, both of which had a participation of twenty five members of the respective groups from ICAR-RCER, Patna. These programmes were planned and organized with a

view to sensitize the participants to the various issues that need to be understood and addressed in order to promote healthy human relationships at work. The programmes covered important issues of organizational behaviour and human resources management, which have a great bearing on the human relations in the organizations.

Enhancing Human Capabilities at Work

People working in the organization have to be provided with appropriate awareness and skills that would help them in enhancing their capabilities at work. Keeping this in view and based on the request received, a Specialized Programme on Enhancing Human Capabilities at Work was organized for the benefit of the scientists, technical officers, and personnel from administration and accounts, at Central Research Institute for Dryland Agriculture (CRIDA), Hyderabad. Such a mixed training group helped in bonding the members playing different roles in the institute and helped to demystify their roles and responsibilities to each other, thereby promoting an understanding amongst them. The programme was designed to cover various issues related to organizational behaviour and human resource management, management of research, IP-management and marketing of research, and issues concerning purchase procedures and other administrative procedures and processes. The programme was organized from March 12 to 17, 2007, to provide an excellent platform for the diverse group of personnel to interact and share various ideas and issues on the topics covered. Twenty five participants of scientific, technical, administrative, finance and accounts have participated in the programmel.

International Programmes

Programme	Duration	No. of participants	Coordinator(s)
Research-Extension Linkages for Effective Delivery of Agricultural Technologies in SAARC Countries	November 20-22, 2006	67	R.K. Samanta B.S. Sontakki

Workshop on Research-Extension Linkages for Effective Delivery of Agricultural Technologies in SAARC Countries

The regional workshop was organized at NAARM in collaboration with SAARC Agricultural Information Centre (SAIC) Dhaka, Bangladesh. The objectives of the workshop were to study national policy processes providing facilitating

framework and practices for establishing stronger agricultural research-extension linkages; to highlight the technical, economic and institutional conditions influencing development of collaborative linkages between research and extension systems, and to identify key weaknesses and ways of strengthening links to improve agricultural communication between research and extension organizations.

This regional workshop provided a platform for taking stock of the intricate, complex and dynamic issues in Research-Extension Linkages across the SAARC countries and to facilitate them to design appropriate strategies to strengthen Research and Extension linkages for effective transfer of technologies to ensure sustained agricultural growth in the predominantly agrarian SAARC economies.

In his inaugural address, Padmasree Dr M. V. Rao, former Special Director General, ICAR, called for a second green revolution to meet growing food demands of increasing population. The crisis may arise in food productivity as the cultivable land is declining day-by-day, and the technology is not being transferred to the end-user, which are the biggest drawbacks in agriculture, he added. Speaking on the occasion, Dr Wais Kabir, Director, SAIC, said that there was a need to strengthen the research extension linkages to free SAARC countries from hunger. The member countries can benefit from the rich experiences of the other countries through sharing of information, he added.

“Agriculture knowledge should be translated to generate wealth in post-WTA era and agriculture inclusivity in country’s growth is essential for the overall development”, said Dr S. Prakash Tiwari, DDG (Edn), ICAR, New Delhi, while speaking on the occasion. Agriculture R&D has been contributing to GDP indirectly also through other sectors like industry, which use the agricultural technologies for income generation, he added. The agri-based services should be encouraged to generate gainful employment. The successful models of the extension system in our country can be adopted by the other SAARC countries, he emphasied.

Dr Sufiur Rahman, Director, SAARC Secretariat, Kathmandu presented the SAARC’s expectations from the workshop. “Income disparities in various fields are reflecting on agriculture profession. Food deficit is still experienced in South Asian countries despite three decades of growth in agriculture”, he added. Research-Extension linkages are very important in transferring developed technologies from those who generate them to the end-users, he stressed.

The workshop focused on the facets of linkage mechanisms that countries apply in a number of approaches to strengthen them. Two participants from each SAARC member state were invited to present country papers during the workshop as key resource persons. These resource persons presented their experiences through case studies and country papers on the workshop themes which included the conventional roles of extension and research; methods adopted for bridging the gap between research and extension; problems of extension service as constraints to linkage building; research-extension-farmer interface; recent institutional restructurings / reforms / reorganizations; case studies of critical roles taken up by other players in the same arena.

The proceedings / outcomes of the workshop would be published by SAIC and widely distributed for follow-up actions by the relevant institutions. The sixty seven delegates including SAARC nominees, SAIC officials and local resource persons representing ICAR, SAUs, NGOs, private sector and farmers participated in the workshop.

Feedback

Programme	Feedback
FOCARS	▪ Course is useful informative, and sessions on Project management, Organizational behavaiour, Agric. scenario were appreciated. ▪ Some sessions were long and drawn out. More practicals needed ▪ Guest faculty involvement needs a re-look. Outstanding people who are role models need be invited. This could include some management experts outside ICAR. ▪ Instead of lecturing by guest faculty, scope for more interaction was asked. ▪ Electives need to be included. ▪ Field Experience Training received appreciation, can further be improved ▪ Sessions on contemporary topics required. ▪ Frontier areas of research and ethics and values highlighted are immensely useful. ▪ The probationers may be encouraged to write proposal documents while at NAARM and these should be sent to the respective places of posting. ▪ Interaction with farmers associations, NGOs and private sector may be included
Senior Programmes	▪ Quality resource material was supplied ▪ Acquisition of new knowledge and skills ▪ Good exposure to different areas ▪ Case study exercises to be included ▪ Need video shows on relevant topics ▪ More hands-on experience needed ▪ Opportunities to be given to participants for making presentation of their case materials
Refresher Courses Summer / Winter Schools	▪ Course content, modus operandi, and practical utility of the programmes satisfactory ▪ Useful and good study material provided ▪ More time for library consultancy ▪ Case studies for Indian context and success stories need to be incorporated ▪ Resource material of guest speakers need be provided ▪ Need for more study visits to institutions in and around Hyderabad
Workshops / Conferences	▪ Themes are relevant to the needs ▪ Provides an excellent forum for sharing information on topical issues ▪ Timeliness and usefulness of the programmes ▪ Structured presentation by participants as case studies need to be included

Research

NAARM

Annual Report 2006-07

Research

Research

Besides its primary mandated activity of training and capacity building, the Academy carries out research projects on the management issues / problems of the National Agricultural Research System (NARS). These research endeavours are carried out through funding support from ICAR as well as external donors. The output of these research projects provides support to the system to address the larger policy concerns and issues of research, education, information and communication and extension management in agriculture in the following areas through Institute-funded as well as sponsored research projects. This apart, such research-based cases, databases and empirical evidences add practical value to the training endeavours of the Academy. During the ongoing year, nine projects were successfully completed three of which are institutional projects and six externally funded (four from AP Cess and one each from APNL Biotechnology Project and DST). Major research achievements of these projects are summarized below:

Sl. No.	Project title	Sponsor	Investigators
1.	Impact assessment of fisheries research in India	AP Cess	G. P. Reddy, B. S. Sontakki and M. N. Reddy
2.	Identifying strategic issues and prospective approaches in higher agricultural education system in India to face challenges of GATS	AP Cess	S. K. Soam and R. Kalpana Sastry
3.	Modeling strategic management action plan for curriculum up gradation for Indian SAU system in the global scenario	AP Cess	A. Gopalam and S. N. Saha
4.	Development of decision support tools for agricultural research systems transition towards sustainability	AP Cess	N. H. Rao and M. N. Reddy
5.	ICTs for sharing of agriculture information in rural India	AP Cess	N. Sandhya Shenoy, D. Rama Rao, N. H. Rao, M. N. Reddy, and B. S. Sontakki
6.	Assessment of qualitative rating of colleges in the state agricultural universities	AP Cess	Jagannadham Challa, S. K. Nanda and, D. Rama Rao
7.	Capacity building of NARS in application of GRAM GIS in microlevel planning and development for sustainable agriculture	DST	N. H. Rao, M. N. Reddy, K. H. Rao, G. P. Reddy and S. K. Soam
8.	Promotion of inter-disciplinary orientation and inter-institutional collaboration in the NARS	NAARM	T. Balaguru and P. Manikandan
9.	Efficacy of PRA for research project formulation	NAARM	V.K. J. Rao, K. M. Reddy, and C. Sriram

10.	Transience in organization	NAARM	M. M. Anwer, B. S. Sontakki and R. V. S. Rao
11.	Organizational climate in ICAR	NAARM	M. M. Anwer, B. S. Sontakki, C. Sriram, K. H. Rao and R. V. S. Rao
12.	Leadership styles and effectiveness in ICAR institutes	NAARM	M. M. Anwer, P. Manikandan, R. V. S. Rao, and K. H. Rao
13.	Strategies for enhancing agricultural engineering research output in ICAR	NAARM	C. Sriram, S. K. Nanda and G.R.K. Murthy
14.	Role efficacy and motivation levels of ICAR scientists	NAARM	K .H. Rao, B. S. Sontakki and G. P. Reddy
15.	Assessment of 'Transfer of Learning' of NAARM training to NARS	NAARM	B. S. Sontakki and R. K. Samanta
16.	Organizational stress and stressors among the scientists and teachers of ICAR institutes and State Agricultural Universities	NAARM	P. Manikandan, K.H. Rao, M.M. Anwer, and R.V.S. Rao
17.	Assessment of Agri information portals for effective knowledge transfer	NAARM	G.R.K. Murthy, K.M. Reddy
18.	Public-Private partnership in the service of farmers through Information and Communication technologies (ICTs)	NAARM	N. Sandhya Shenoy, D. Rama Rao, M. N. Reddy, and V.K.J.Rao
19.	Provisions of the Biological Diversity Act, 2002 vis-à-vis allocated business of ICAR/DARE	NAARM	S. Prakash Tiwari, R. Kalpana Sastry, and S.K. Soam

Impact assessment of fisheries research in India
(AP Cess Funded Project)

Objectives:

- To analyze investments in capture and culture fisheries research in India;
- To evaluate return to investment of research in capture and culture fisheries; and
- To assess the socio-economic and environmental impacts of fisheries technologies in different systems.

Achievements:

This project is being undertaken with funding from AP Cess in network mode involving 10 institutions. The project seeks to assess the economic, social and environment impact of fisheries research in India with focus on macro and micro impact analysis. Project initiation workshop was conducted during April 20-21, 2006. A status paper on Fisheries Research in India – A Overview was prepared

and presented in this workshop. Eminent fisheries and social scientists were invited as experts to work out the methodological details and collaborating centre-wise work plans. NAARM was entrusted with collection and analysis of primary data on impact of shrimp and scampi culture technologies in Andhra Pradesh. Data from over 400 aquaculture farmers from East and West Godavari districts of AP was collected. Data logging and analysis is underway. A spatial database for the fish farms of East and West Godavari districts is being developed using GPS, GIS and Google-Earth images.

One methodology was developed to select representative samples for collecting primary data based on the spatial distribution of water bodies by using ARCGIS and ERDAS. Using ARCGIS, the project created East Godavari, West Godavari boundary maps, and mandal maps. Satellite image Rectification and boundaries sub setting was done in ERDAS Imagery 8.6 package and each mandal polygon was converted into Area of Interest (AOIs) in ERDAS. These AOIs were used to extract sub set images from main image for classification.

The different steps involved - Collect satellite images and toposheets, digitization of boundaries of East and West Godavari districts, digitization of East and West Godavari mandal maps, extracting of East and West Godavari imagery part by using the boundary, unsupervised classification of East And West Godavari Imageries, converting each mandal vector files into AOIs, extracting each mandal imagery by using the above AOIs, classification of East Godavari, West Godavari and mandal imageries, and calculating water bodies area.

IRS P6 (Resource Sat) data (Sensor: AWiFS, resolution: 70m, Path-Row: 100-060) was selected for this study, ArcGIS 9.0 was used for digitization of maps and ERDAS image 8.6 package was used for classification. The AwiFS provides reflectance data in green, red, blue and near-infrared bands at 70 m spatial resolution and at 24 days re-visit, covering a swath of about 737 km. This data is found to be useful for identifying water bodies.

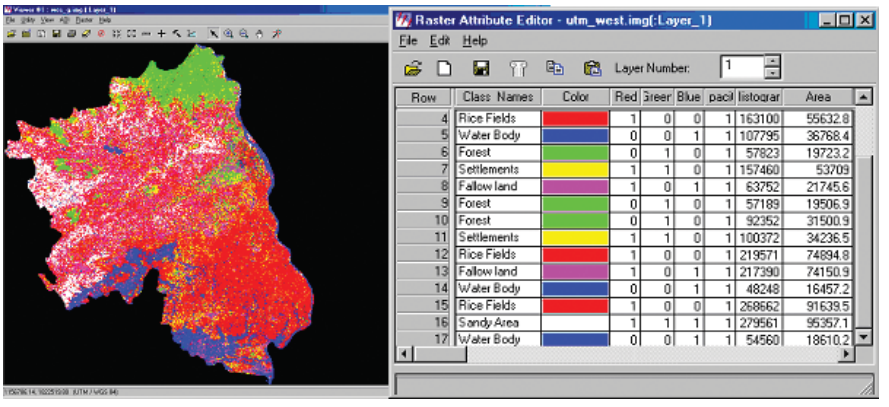
Spatially balanced survey design

Spatially-balanced sampling (SBS) is a relatively new approach to develop survey designs that are useful for natural resource researchers and practitioners (Stevens and Olsen 2004). The SBS approach generates survey designs are probability-based, also spatially well-balanced, and is simple and flexible. Spatially-balanced sampling leads to more efficient sampling, defined as providing more information per sample, because it attempts to maximize the spatial independence among sample locations. A useful way to measure statistical efficiency of survey design is to compute a spatial efficiency ratio (*ER*) of the variance of the area of the Voronoi polygons formed by a SBS design vs. a SRS design (Stevens and Olsen 2004). If $ER < 1.0$, then the SBS design is more spatially efficient than SRS.

There are several advantages of generating an SBS design within a geographic information system (GIS) framework. First, GIS is typically used to establish the sample or reference frame. That is, spatial data is typically needed to represent the population – the spatial extent and location of the study area to be sampled or the set of geographic features to be sampled from (e.g., targeted vegetation types, sections of a stream that provide habitat for a target species, a set of lakes, etc.). Note that a full range of geographic features, including points (e.g., centers of lakes or pre-defined stream reaches), lines (streams, roads, etc.), areas (vegetation patches, lakes, estuaries, etc.), and combinations of these are supported. Moreover, if certain geographic regions or particular features need to be sampled at different intensities (e.g. rare vegetation types or higher-order streams), then again a spatial dataset provides a convenient way to specify the unequal probabilities associated with different geographic features.

Occasionally, inclusion probabilities may need to vary continuously across a surface to reflect an environmental gradient such as elevation or precipitation. This can be accomplished easily using raster-based representation of spatial data. Second, GIS allows the visualization of a complete survey design so that the samples can be viewed within the context of other geographic layers, such as vegetation types, roads and trails for access, land ownership, etc. Examining the context of the samples is useful both to evaluate a survey design and to develop a logistical plan for collecting the primary field data.

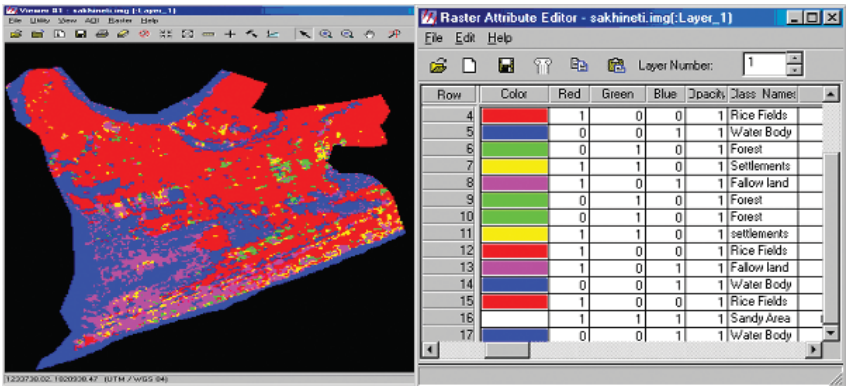
Classification was used with 17 classes. Raster attribute table was further updated with the identified features. Areas under these features were generated under Area column by this classification.



Row	Class Names	Color	Red	Sreer	Blue	pacl	histograr	Area
4	Rice Fields		1	0	0	1	163100	55632.8
5	Water Body		0	0	1	1	107795	36768.4
6	Forest		0	1	0	1	57823	19723.2
7	Settlements		1	1	0	1	157460	53709
8	Fallow land		1	0	1	1	63752	21745.6
9	Forest		0	1	0	1	57189	19506.9
10	Forest		0	1	0	1	92352	31500.9
11	Settlements		1	1	0	1	100372	34236.5
12	Rice Fields		1	0	0	1	219571	74894.8
13	Fallow land		1	0	1	1	217390	74150.9
14	Water Body		0	0	1	1	48248	16457.2
15	Rice Fields		1	0	0	1	268662	91639.5
16	Sandy Area		1	1	1	1	279561	95357.1
17	Water Body		0	0	1	1	54560	18610.2

Polygons of East Godavari and West Godavari mandals were converted into AOIs to use further to subset mandals. Mandal imageries were extracted from the scene by using AOIs of each mandal. Subsets of each mandal were extracted by using subset option with above classified file as input and AOIs of each mandal as boundaries.

Water body Area for each mandal was calculated. There were 57 mandals in East Godavari district. These mandals were grouped based on the water body area. First category (>2000 ha) and there were 4 mandals. Second category (>500 ha and <2000 ha), and found 4 mandals under this category.



Identifying strategic issues and prospective approaches in higher agricultural education system in india to face challenges of GATS
(AP Cess Funded Project)

Objectives:

- To analyze GATS obligation and mechanisms with respect to higher agricultural education system, and develop recommendation domain;
- To find out potential risks and opportunities in trade in educational services with respect to- preparedness, commitments in service delivery and receiving service (modus operandi and country of interest) and capacity building in agricultural education system; and
- To identify the competitive advantages of Indian higher agricultural education system to take maximum advantage.

Achievements:

The project on was completed. On the basis of the findings, the recommendations were drawn on various aspects of educational strategy as given below:

1. Preferences of efforts and the choice of mode of delivery of service; 2. Cross border supply: India as exporter; 3. Cross border supply: India as importer; 4. Consumption abroad: India as exporter; 5. Consumption abroad: India as importer; 6. Commercial presence: India as exporter; 7. Commercial presence: India as exporter; 8. Commercial presence: India as importer; 9. Strategic linkages and collaboration; 10. Policy and regulatory requirements.

Modeling strategic management action plan for curriculum up gradation for Indian SAU system in the global scenario

(AP Cess Funded Project)

Objectives:

- To define the process dimensions and also document the action plan matrix for acceptable curriculum up gradation for accommodating global developments and world reactions.
- To develop methodology for curriculum modification for socially acceptable agricultural education under the premises of global change and world developments.

Achievements:

Data was collected from 240 respondents from five universities viz Tamil Nadu Agricultural University, Coimbatore; Acharya N.G. Ranaga Agricultural University, Hyderabad; University of Agricultural Science, Bangalore; University of Agricultural Sciences, Dharwad; Maharastra Agricultural University, Parbhani. The inferences drawn from the responses indicated that team dynamics and communication opinions are essential elements for curriculum design and development in its appropriateness. A model strategic management action plan was developed indicating the sequences in curriculum design and development.

A workshop was conducted on March 16 - 19, 2007 on curriculum design and development in arising contexts. Out of 17 participants, thirteen presented papers on different issues pertinent to curriculum design and development besides the key presentation by Dr. S.L. Mehta, Vice Chancellor, Maharana Pratap University of Agriculture and Technology, Udaipur; S. Kannaiyan, Chairman, National Biodiversity authority, Chennai; and Dr. M. Sudarshan Reddy, Dean of Agriculture, Acharya N.G.Ranga Agricultural University, Hyderabad. The recommendations included a concrete planned initiative in distance education multimedia lesson modules in optimizing learning teaching and planned approach for curriculum design and development

A resource manual entitled Formulating Curriculum in Agriculture was prepared which consists an elaborate description of various essential elements in curriculum design and development viz. design and development, consequences in curriculum design and development, consequences of learning in curriculum, management aspects of curricula, case studies in subject specific curriculum, and hands on exercises on curriculum design and development was prepared and sent for review

This project enabled to develop a basic conceptual framework on curriculum design and development, compendium of research approach and concept papers on curriculum for arising contexts and a resource material on formulating curriculum in agriculture besides sensitizing the SAU faculty on the need for developing management action plan for curriculum up gradation and provoke The SAU faculty for periodical updating of Curriculum by methodological sequences.

In this study up grading the curriculum in the arising areas of world development to the acceptable limits is being attempted. The study will address to the vocational needs of the present educational initiatives & will provide a direction to the various academic committees. The out come of the study will not only address to the present needs but also develop a strategic planning model for curriculum modification. The integration levels aimed in the study will fulfill the transitions that desired to be taken place.

If some of the recommendations are accepted, Curriculum modification conducted periodically by Dean committee will be facilitated to accommodate the thematic areas of world development. The learners will be purpose oriented here after and the developed curriculum will have social relevance.

This project will provide a sound base for curriculum modification in order to provide better knowledge managers, develop appropriate curriculum in the arising contexts and ultimately the education will have social relevance vocational suitability and profession orientation.

Development of decision support tools for agricultural research systems transition towards sustainability

(AP Cess Funded Project)

Objectives:

- To develop an analytical framework to structure issues relating to agricultural research management with a sustainability perspective;
- To develop decision support systems to plan, prioritize, and evaluate agricultural research programmes for sustainability of production systems; and
- To ensure wide access of the stakeholders to the philosophy, concepts, data bases, knowledge bases, technologies and methods relevant to research, development, policy and practice of sustainable agriculture by their dissemination through the Internet and other media.

Achievements:

The project was completed in May 2006. Final analysis was done to assess the important indicators of sustainability such as spatial and temporal pattern of rice yield response to fertilizer and crops diversity of foodgrain under rainfed and

irrigated conditions. A detailed analysis of growth rates of yield, fertilizer use (kg/ha), intensity of irrigation, area under rice was done to identify the sustainable and unsustainable districts with respect to rice productivity under different agro-ecological conditions. The sustainability of productivity was assessed by considering the non-negative trends in the index of partial factor productivity. The results of this study was presented in the ESRI GIS user conference and communicated for publication in journals.

Information and Communication Technologies (ICTs) for sharing agricultural information in rural India (AP Cess Funded Project)

Objectives:

- to assess the farmers' information needs relevant to Internet and build a system using ICT in agriculture technology dissemination for problem solving
- to empower farmers and farm women in the use of ICT, and
- to develop strategy for scaling up the use of ICT for improvement in the quality of life in rural areas.

Achievements:

The *needs survey and prioritization* and the *resource mapping* was made using the participatory methods. The information needs of the farmers and farmwomen were assessed. Based on the problem prioritization and rank based quotients it was found that pests such as Cotton bollworm (76.94) and whitefly (56.40) followed by Chilli mites (51.93) and thrips (51.26), Paddy blast (43.13) and Hispa (35.29) devastated the crops in that order. The integrated pest management and the integrated cropping and farming systems were recognized as technological options in uplands and lowlands. The backyard poultry farming was a recognized opportunity for the mid lands (residential area). The information needs on the content as prioritized by the farming community, included the integrated pest management, the crop management practices of cotton, chillies, paddy, redgram, castor and jowar, drought tolerant varieties and dairy management. Most important general information needs were regarding quality drinking water (fluoride control) and alternate livelihoods. The media research on usage and preference of media revealed that Television was the most popular communication medium (46%) transcending all categories, including the large, small, marginal farmers and the landless agricultural labour, followed by Radio (26%), Phone (19%) and Newspaper (19%). The television and radio were used mainly for entertainment purpose rather than information medium for agriculture. None had used the phone for the purpose of receiving agricultural information or for problem solving in agriculture. None were aware of the personal computer as communication medium for agriculture purpose. After making the farming community aware of the computer uses, 64 per

cent preferred using computer as information and communication medium for agriculture out of which 29 per cent preferred specifically for dairy information, 6 per cent were interested to know marketing information, developmental activities or new issues in agriculture through Internet. Around 30 per cent were not interested in computers as communication medium, indicating the necessity of awareness creation and exposure for this medium. The farmers preferred agricultural content presentation in the form of digital videos and multimedia modules in CDs followed by web pages with photographs.

The *database of individual farm households* including the farm and animal information was prepared. All the information is made available and accessible through hosting in the *website* (http://icar.naarm.ernet.in/GujjaVillage/ICTgujja/home.swf) to serve as a ready reference for the research and development initiatives.

The *info kiosk was set up* with the multimedia computers with accessories, phone, Internet facilities, and television and VCR for viewing and recording agricultural programmes at the selected project site to provide exposure needed to make the farming community aware of the use of the information and communication technologies (ICTs) and to facilitate capacity building in using these applications in agricultural information retrieval and problem-solving based on contingent local needs.

For the *capacity building in ICTs* for farming community and the master trainers, institutional training programmes as well as village-based hands-on trainings were conducted. *Around a hundred farm youth, farmers and farmwomen, as well as the volunteers from the collaborating NGOs were trained. Three email accounts* were opened *for the farming community* to enable communication viz., gujjafarmers@naarm.ernet.in, gujjafarmers@yahoo.com and gujjafarmers@hotmail.com The services and the use of the information kiosk was widely publicized through the use of pamphlets in the surrounding cluster villages of Narayanpur mandal to enable farmers from other villages also to avail the facility established in Gujja. The benchmark survey, participatory rural appraisal, needs assessment and problem prioritization facilitated the identification of the content organizations, and, the ensuing *diagnostic visits, digitizing field problems*, *pre and mid season farmers meets* aided in providing the location-specific, need based agricultural information and advice to the farming community and *preparation of location-specific agricultural content modules*.

The *networking and interfacing with experts* is emphasized for the sensitization of the SMS in the use of ICTs while interacting with the farmers and the continuous assistance for the project in terms of quality inputs supply to the farmers and for technical support needed. In order to serve the net meet and conferencing activities, taking the bandwidth concerns in view, an additional

information kiosk was established in collaboration with the DHAN at a centrally accessible location in Choutuppal to provide integrated ICT services to the villagers of Gujja and the neighbouring cluster of villages.

From virtually being unaware of using computers, the farming community became computer literates and confident in using the multimedia accessories of the computers and making presentations. The farmers became aware of market prices, weather details and read vernacular newspapers (Telugu) through Internet browsing and interacted with agri-experts for problem solving in agriculture by email and made toll free phone calls to the agricultural call centres manned by public or private organizations. The project also helped in people's mobilization and favourable opinion building among the cluster of villages apart from the project site, regarding the ICTs application and utilization for agriculture and other areas such as education and health etc.

The major accomplishments include, *the partnership* with the collaborating NGOs and public sector organizations right from the initiation through out the execution of the project, which provided support to the project activities from time to time.

The project relied on the *Integrated ICT model* where participatory methods of needs assessment and prioritization that determines the appropriate need-based location-specific content, appropriate content treatment and delivery through suitable and preferable media that involve both traditional and modern electronic and non-electronic forms. The model advocates complimenting, supplementing and strengthening the on-going extension mechanisms and organizations involved in the same instead of a stand-alone approach. The scalability and the sustainability of the model depend on the fruitful networking among the contributing organizations, people's mobilization and social capital utilization through capacity building.

Assessment of qualitative rating of colleges in the state agricultural universities (AP Cess Funded Project)

Objectives:

- To develop an appropriate methodology for qualitative rating of colleges; and
- To assess rating of colleges in SAUs in terms of inputs, output, commercial and social acceptance of its graduates, and competitiveness and career development of graduates and post graduates globally.

Achievements:

One National Brainstorming Workshop was conducted at NAARM in January 2006, where the theme paper on the topic was presented and brainstorming

was conducted on three key questions. Based on the data that emerged in the workshop, it was agreed to collect data on quality assessment of colleges on eight benchmark indicators, with each one a having a certain weightage. Several mini sessions were conducted at several campuses of SAUs using Delphi technique for generating more data through a larger sample size. Six data generating instruments and tools were designed and developed. A total of 71 parameters have been identified for eight benchmark indicators. The instruments developed are as follows:

- Five years data from the College Administration
- Five years data from the Heads of Departments
- Teachers Satisfaction Score
- Student Satisfaction Score
- Feedback from Non-teaching staff/local community
- Information on Alumni of the college
- Personal visit report on the facilities and general upkeep

Seminars were delivered at each college, and faculty and student interactions were organized. Where possible interactions were also organized to interact with the non-teaching staff and local community including farmers. So far 28 SAUs have been visited and data on 125 colleges is being generated on the specified parameters.

Capacity building of NARS in application of GRAM GIS in micro-level planning and development for sustainable agriculture (DST Project)

Objectives:

- To develop a GRAM GIS based framework for assessing agricultural production systems at various levels for sustainability; and
- To organize and conduct training programmes on application of GRAM GIS in planning and management for sustainable agriculture.

Achievements:

The project on GRAM GIS was completed in December 2006. Mandal level data on crops, livestock, sources of irrigation and socioeconomic variable such as population density and literacy in the district of Mahabubnagar, AP was collected in different time periods. Developed the case study on assessment of sustainable agriculture and mapping based on time trends across the mandals in diversity of crops and input use for micro-level planning. Primary data was collected in 20 villages on complete profile of farmers, crops, livestock, input use etc. The data on locations of farmers fields was collected using GPS (Global Poisoning System) for developing GIS based case studies in micro-level planning.

Promotion of Inter-disciplinary Orientation and Inter-Institutional Collaboration in the NARS

Objectives:

- To build inter-disciplinary perspectives in the researchers through capacity building activities; and
- To evolve suitable mechanism for effective inter-institutional collaboration through policy interventions.

Achievements:

As an applied science basically, agricultural research needs to be essentially multidisciplinary in nature. Agricultural production problems require solutions to be developed based on contributions from several disciplines. This calls for a shift in the orientation of scientists in the NARS from a narrow disciplinary focus to a broad multidisciplinary focus. In the face of increasingly felt resource crunch and the complexity of agricultural production problems, it becomes necessary to bring together institutions engaged in agriculture and allied areas to work as partners in technology development and dissemination. This project attempts to address this issue in the NARS with specific reference to the implementation of National Agricultural Innovation Project (NAIP) in a consortia mode.

The developed questionnaires were administered on a pilot scale to scientists working in selected ICAR Institutes and Agricultural Universities, and new areas were added besides modifying the existing areas in the questionnaires on the basis of response received through the pilot study.

On the basis of extensive literature search and interaction with scientists in NARS, the developed questionnaires on these two aspects were refined to suit NAIP requirements. The revised questionnaires focus on the major areas:

A. Inter-disciplinary Orientation:

- Necessity: Problem orientation of agricultural research
- Programmes amenable for inter-disciplinary dispensation
- Intended benefits: Synergism
- Factors facilitating inter-disciplinary orientation
- Constraints hindering inter-disciplinary orientation
- Evolving appropriate HRD strategy
  - Orientation through sensitization programmes
  - Skill development through training and experience building
- Policy interventions

- Appropriate programme/project appraisal system
- Relevant HRD strategy
- Suitable incentive/reward system

B. Inter-Institutional Collaboration:

- Need for effective collaboration
  - Plurality of stakeholder involvement – public sector, private sector, agro-industries, NGO's, farmer groups, international institutions, etc.
  - Efficient utilization of infrastructure facilities and expertise
- Intended benefits: Synergism
- Public – private partnership (PPP) building
  - Partnership mode – contractual, collegial, strategic, etc.
  - Shared vision and goals
  - Balancing service and commercial goals
  - Exchange of information and expertise
  - Orientation through sensitization
- Threats for building collaboration
  - Cultural barriers
  - Perception of competition
  - Procedural weakness
- Policy interventions
  - Procedure simplification – administrative and financial
  - Common facility creation
  - Evolving appropriate legal framework
  - Suitable credit/risk sharing mechanism

This project originally proposed as NAARM project is being included as one of the research studies under L&CB proposal of Component 1 of NAIP.

Efficacy of PRA for research project formulation

Objectives:

- To examine whether FET through PRA provide opportunities to Agricultural Scientists to understand farmers' needs and aspirations, and suggest available and relevant technological solutions;
- To study whether the FET helps scientists to identify and prioritize field problems related to agriculture, develop multi-disciplinary projects, and transfer technologies effectively; and
- To establish PRA as a valid methodology for developing field problem based research projects by a multidisciplinary and cohesive team of Agricultural Scientists.

Achievements:

An instrument was developed to measure the efficacy of PRA for research project formulation. The questionnaire was administered in person and through mail, the data was analyzed using index construction, and simple percentages, frequencies and graphs were used to interpret the data.

The data reveal that ICAR scientists have higher perception indices on PRA as an useful tool for research project formulation. Majority of the scientists feel that PRA is useful for research project formulation. The Project has analyzed around 21 PRA techniques and a few processes of PRA like triangulation, validation, check list preparation, synthesis and action plan preparation, in its usefulness for research project formulation. Wherever the disciplines have expressed lower scores on the utility of the PRA techniques and processes for research project formulation the suggestions and interventions have been suggested.

Transience in organizations

Objectives:

- To sensitize ICAR Directors to Transience Management (TM);
- To identify issues for TM in research institutes;
- To evolve action plans for institutional TM;
- To synthesize experience in TM at institutes; and
- To monitor TM at institutes

Achievements:

The project was successfully completed. Project report prepared and submitted. The study profiled the change management behaviour of the CEOs of ICAR institutes by analyzing their change management skills. It was observed that even though change in task, structure, technology and people was planned well by most of the 19 respondents, successful implementation of change plans remained much to be desired.

Recommendations for change management in research organizations and measures to improve basic change management tactics in them: Based on the above research study conducted on the nature and process of change managemernt in research organizations, the following recommendations are made.

- Intensive training needs to be imparted on change management to the Directors of research institutes as it is seen that less than half showed *very good* personal characteristics with reference to change management, while none could make it to the *excellent* category.

- Change management workshops are a good means of sensitizing and imitiating the change management process and these should be periodically conducted.
- Those Directors who do not apply themselves well to produce excellent, very good or good roadmaps for change, and prepare only fair or poor documents may be required to redo the effort.
- Regular and periodic follow up visits may be made by the management experts to review and monitor the change implementation process.
- A follow up workshop may be conducted for the presentation, discussion and experience sharing of the change implementation reports in order to ensure that effective implementation does takes place, and also the experiences during this process are also shared by the participants
- Successful implementation of the roadmap for change must be rewarded and awarded, while its non implementation should draw flack and be noted for suitable action.
- In addition to self assessment and self reporting of the oimplementation of the roadmaps for change, there may be an evaluation by an out side agency.
- A roster of mandatory participation in management workshops may be prepared for the Directors of research institutes inorder to ensure that the Directors do periodically devote time to improve their management knowledge and skills and utilise them for improved management of their institutions.
- The Directors may ensure the participation of their institute members in preparing their vision for the institutes and the roadmap for change. Such a contingency may be incorporated in the transience process.

In conclusion, it may be said that change management is a difficult and a slow process and requires a great concerted effort to ensure its successful implementation. HRD efforts in change management in the shape of training followed by periodic workshops and regular monitoring by management consultants is essential to bring about effective change in the system. It may be appropriate to establish an All India Coordinated Research Project on Management of Research Institutes with all the Directors of research institutes as cooperating members and to have an annual work plan and quarterly workshops in small groups of 25 participants each. Such a project may be managed by a project coordinator in a rank higher than the Directors of research institutes.

Organizational climate (OC) in ICAR

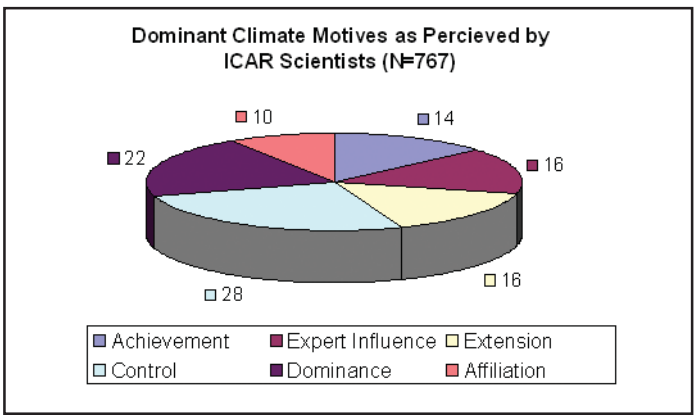
Objectives:

- To generate baselines data and information on organizational climate in ICAR Institutes.
- To analyze and report on the prevailing organizational climate in ICAR institutes at both individual institute and ICAR level.

- To offer recommendations, through changes in organization structure and work processes, aimed at improving organizational climate at the institute and ICAR level.
- To evolve a system to regularly monitor organizational climate in ICAR Institutes and ICAR as an organization.
- To report, in a structured manner, the prevailing organizational climate at individual institute and ICAR level.
- To promote creative and enabling climate in ICAR

Achievements:

Data collected from 767 respondents of ICAR institutes through mailed questionnaire survey was analyzed to chart the distribution based on overall perception of organizational climate in ICAR. The results revealed that as high as 87% respondents perceived organizational climate of ICAR as 'favourable' followed by 10% and 3% who perceived it as 'unfavourable' and 'highly favourable', respectively. Further analysis to identify the antecedents of organizational climate perception in terms of personal, job and organizational related factors in ICAR is in progress.



Leadership styles and effectiveness in ICAR institutes

Objectives:

- To identify leadership styles of research leaders of ICAR;
- To measure the leadership effectiveness of these leaders; and
- To collect information through self-assessment on basic leadership qualities of research leaders.

Achievements:

191 Research leaders from ICAR were studied for different characteristics of leadership as the dependent variable. Twelve characteristics of leadership that

have been studied using as many instruments to explore (1*) leader characteristics and traits, (2) leader behaviour and style, (3) group member characteristics and (4) internal and external environment*. All these four components determine the leadership effectiveness. In order to have effective and dynamic leadership for an organization, its leaders should be able to score high on these characteristics as tested through relevant instruments. The characteristics studied were *Readiness to take up leadership role, Assertiveness, Strength of achievement motive, Leadership effectiveness, Risk taking, Situational leadership both main style and backup style, Situational leadership effectiveness score, Political behaviour, Impression making with boss, Personal creativity, Creating an effective climate for innovation, Communication effectiveness and Strategic thinking.*

The percentage of people falling in the different classes under each instrument is given in the table 1 below. The classes range from the desirable to the undesirable. The desirable classes have been represented in italics. It is seen from the table below that only one class have the largest number of people in the desirable characteristics. These are communication ability and tendency to play organizational politics. In eight other characteristics the highest number of people are in the moderate or average class. In two characteristics viz. assertiveness and risk taking, majority were in the non-assertive and risk avoiding classes.

Table 1: Overall table showing percentage of respondents in different classes of leadership domains

Leadership Quality	**Percentage in each category**			
Readiness for Leadership Role	*High 6.02*	Moderate 90.51	Low 3.66	
Assertiveness	Non-assertive 50.69	*Assertive 49.31*	Aggressive 0	
Achievement Motive	*High 45.83*	*Moderate 54.17*	Low 0	
Leadership Effectiveness	*Highly effective 11.57*	Moderately effective 57.87	Less effective 30.56	
Risk Taking	HeavyRisk Taker 0	*Sensible Risk Taker 1.39*	Risk Avoider 98.61	
Leadership main style	Telling 20.46	Selling 71.61	Participating 7.16	Delegating 0.77
Leadership backup style	Telling 43.48	Selling 18.91	Participating 34.02	Delegating 3.58
Leadership effectiveness score	Poor 7.93	Fair 44.76	Good 38.36	*Very good 8.95*

Tendency to play Organizational Politics	Above Average 10.88	*Average 50*	Below Average 39.12	
Impression making	*Politically savvy 0*	Moderate Concern 53.24	Not Enough Effort 46.76	
Creative Personality	*Creative Leader 0*	Moderately Creative 66.99	Intellectual Conformists 33.01	
Climate for Innovativeness	*Encourages Innovation 33.1*	Average Climate 40.97	Inhibits Innovation 25.93	
Communication Effectiveness	*Very Effective 68.75*	Effective 31.25	Low 0	
Strategic Thinking	*Thinks strategically 6.71*	Neutral detached 93.29	Emphasis on now & short term 0	

Italics indicates desirable leaderships

Strategies for enhancing agricultural engineering research output in ICAR

Objectives:

- To review engineering manpower utilization in the ICAR;
- To undertake content and trend analysis of engineering research projects with relation to the institute mandate;
- To identify research priorities in Engineering;
- To create database directory of Engineers in ICAR; and
- To identify and focus the roles of Engineers in sustainable agricultural development under WTO and IPR regime.

Achievements:

- The conceptual framework of the project was presented in SRC and finalized.
- Data pertaining to the sanctioned cadre strength of engineering scientists synthesized from published documents.
- A database of the engineering scientists working in ICAR is designed and constantly updated as and when information is received.
- A questionnaire was developed.
- The final questionnaire was mailed to 78 institutes and ICAR headquarters for feedback.
  32 filled-in questionnaires from 21 institutes have been received.

Role efficacy and motivation levels of ICAR scientists

Objectives:

- To empirically map the role perception of ICAR scientists and suggest ways; and
- To enhance correct role perception by suitable interventions.

Achievements:

Data was collected from over 300 scientists of ICAR using mailed questionnaire survey method with the help of a pretested instrument structured for the purpose. The instrument consists of three parts viz., personal profile of the respondents, the role perception scale and suggestions to improve role perception. Role perception questionnaire developed by Pfeiffer and Jones (1980) and modified by Pareek (1986) was used. This questionnaire measures role perception in terms of the strength / degree of 10 dimensions namely, centrality, integration, proactivity, creativity, inter-role linkage, helping relationship, super-ordination, influence, personal growth and confrontation. The data decoding and logging for computer analysis is in progress. Meanwhile, a part of the data was analyzed to see the trend of results.

A study with 99 research personnel from Indian Council of Agricultural Research (ICAR) showed that 77.8 % of the respondents exhibited a satisfactory overall role perception index of above 50, indicating sufficient scope to enhance the role perception of the remaining 22.2 % of respondents by suitable organizational interventions. The overall role perception of research personnel was measured as the total perception of its ten dimensions. Detailed analysis of different role dimensions revealed that only 21.2 % of respondents scored the satisfactory index for role centrality. Only 54.5 % of the respondents were able to perceive the super ordination goals in their present role. The mean indices for proactivity (50.2) and role influence (47.7) were not encouraging, while mean indices of role integration (72.5), role creativity (68.4), inter-role linkage (67.2), helping relationship (79.3), growth (64.4) and role confrontation (90.7) are at above satisfactory level. Experience (length of service) showed positive and significant correlation with role integration, while designation (cadre/position) of the respondent exhibited positive and significant association with helping relationship. It is observed that the centrality, integration, proactivity, creativity, linkage, super ordination and influence have highly significant relationship among different dimensions of role perception. Interestingly, role confrontation did not exhibit interrelationship with other dimension of role perception.

Assessment of Transfer of Learning (ToL) of NAARM training to NARS

Objectives:

- To assess 'transfer of learning' of NAARM training to work situation and organization
- To discern the factors that 'enable' and 'hinder' transfer of learning to work situation and organization, and
- To suggest appropriate measures to improve transfer of learning and thereby impact of training.
- To improve overall effectiveness of NAARM training programmes by augmenting the transfer of learning to actual work situations in NARS.

Achievements:

Conceptualization of study framework and work out the methodological aspects including selection of training programmes for the purpose and empirical assessment of ToL was done. The conceptual model and methodological framework were developed for the study. The data collection instrument was developed and pre-tested in selected training programmes of the Academy. The instrument was refined based on pre-test results and is ready for data collection.

Organizational stress and stressors among the scientists and teachers of ICAR institutes and State Agricultural Universities

Objectives:

- To identify the major stressors for scientists and teachers
- To assess the organizational stress among the scientists and teachers

Achievements:

Literature survey was done to identify various questionnaires related to stressors and stress management, and after critical review of the collected questionnaires, 27 questionnaires were finalized and the compilation made for collecting needed information from the scientists and teachers. The stressors and organizational stress issues focused in the study for collection of information are presented below.

- Personal Factors
  - Personality
  - Assertiveness
  - Self-esteem / self-image

- Resilience
- Time management
- Loneliness

❑ Organizational / work factors
- Work
- Job strain
  - Job demand, job control
- Role stress

❑ Environmental factors
- Family
- Social
- Environment

❑ Stress-related issues
- Stressors level
- Deprivational stress
- Stress toughness
- Stress overload
- Stress management practices followed

Information has so far been collected from158 scientists and teachers in the system. The following are the details of the responses received for the questionnaire.

System	Number of filled-in questionnaires received	Number of institutes/universities
ICAR institutes	46	31
Agricultural Universities	112	26
Total	**158**	**- -**

Assessment of agri-information portals for effective knowledge transfer

Objectives:

- to identify key factors to be considered for web content development with reference to agri-information portals
- to develop a procedure to evaluate the agri–information portals
- to evaluate agri-information portals of relevance to Indian agriculture

Achievements:

Portals which deal with information related to various facets of agriculture are identified through PRA. A total of six portals are identified for final assessment. To

understand the effectiveness of each portal, a methodology was developed wherein a set of questions with expected responses in the form of "Yes" or "No" were developed. The questionnaire covers the evaluation in respect of

- Appearance of Homepage
- Language of presentation
- Nature and presentation of content
- Organization of the site
- Information architecture
- Ease of links for information guidance/redirection
- Provision of search facilities and
- Interface with the user

The questionnaire was administered to those with different technical and linguistic backgrounds to evaluate the portals in their local languages apart from English. The rating of each portal is arrived as

$$\text{Rating} = \frac{N_1}{N_T} x\ 100$$

where

N_1 = Number of questions with response "Yes"

N_T = Total number of questions responded

The assessed portals were also evaluated for their traffic ranking based on the number of pages and users visited those sites.

The prominent findings of the study are

- The overall web rating varied in the range of 62.5-76.5 per cent for all the assessed sites.
- The Agri-information websites have substantial scope to improve their home pages and site organization.
- The search functionality with advanced features needs to be provided for quick and convenient information access.
- Regional language content needs more frequent updating and language refinement.
- Some of the sites dealing with market prices need to update their databases quite regularly. There is a need to have comprehensive market information by interlinking databases among websites.
- Both the ratings and traffic rankings should be considered while assessing the merit of a site.

Public-Private partnership in the service of farmers through Information and Communication technologies (ICTs)

Objectives:

- Public and private partnership for sharing agricultural information
- Using ICT in agriculture technology dissemination for problem solving

Achievements:

During the period under report, two NGO organizations namely, the Society for Women Education and Environmental Training (SWEET) and Development of Humane Action (DHAN) foundation were identified and selected based on their interest to use ICTs for information sharing in agriculture for farming community. Memorandum of Understanding (MOU) was made with the identified NGO partners, viz., SWEET and DHAN foundation to operate the information centres set up at Gujja village and Choutuppal respectively. Based on the MOUs two agricultural information centres equipped with a variety of conventional and IT based ICTs were set up at Gujja and Choutuppal (Nalgonda district).

The survey was carried out for the information needs assessment of farmers, farmwomen and youth based on participatory appraisal and prioritization. Based on the results, The important information needs in agriculture included pest management of major crops, improved seeds and implements, water management, efficient fodder and feed management, increasing milk production and fat content of milk, efficient water management and other general needs included health management, alternate livelihoods and improving drinking water quality.

Around 40 percent of the farmers were growing cotton as a major crop. Therefore, special emphasis was given to study the cotton farmers and the cost involved in cultivation of cotton crop through a sample of randomly selected cotton farmers. Majority of the cotton farmer respondents were small and marginal farmers (93%), illiterate (68%), middle aged (53%), had less than Rs 15000/- annual income (75%), had low scientific orientation (50%) and economic motivation (50%), and medium extension contact (54%) and risk orientation (46%). The cost of cotton cultivation per acre varied from Rs 4650 to Rs 8425 for the sample farmers, and almost all the farmers spent more than 50 % of the cost of cultivation on pesticides and fertilizers. The price per quintal also varied from Rs 1400 to Rs 1850. Around 8 percent of the sample farmers incurred losses. The profits varied between Rs 4650 to a meagre Rs 150 per acre. Around one-fourth of the sample farmers (24%) had less than Rs 500 profit per acre. This variation is mainly due to the heavy costs incurred in pesticides and fertilizers. Among the different categories, the Small and Marginal farmers suffered from losses from cotton or had only marginal profits of < Rs 500/acre. Therefore, it can be concluded that the information on pest and

fertilizer management to cut down the cost of cultivation is of utmost importance to the farmers. The market price information would help the farmers to be better informed thereby reducing the variability in pricing for the similar quality cotton in the village. Regarding the media availability, it was found that the television was available fairly distributed among all the three categories, viz., large, Small and Marginal farmer categories, whereas the use of other media like Radio (8%), Phone(12%), Newspaper(4%) was negligible in Large farmer category and nil among all the categories. Video (0%) and Computer (0%) weren't available or used for agricultural purpose by any of the sample farmers.

The project activities included establishment of information centres and capacity building of the NGO volunteers or selected farm youth to man these information centres. As a result, farmers visiting the ICT centers were provided with information regarding the farming, pests and diseases, suitable varieties, market prices and weather using the ICTs. They were able to provide the results of board examinations through Internet, facilitated in maintaining digitized accounts of the women self-help groups and prepared payroll register in vernacular language for the local school. The farm youth, farmers and farmwomen became computer literates learning the computer basics, using the multimedia accessories of the computers and making presentations. The project facilitated in opinion building and using ICTs in linking farmers to scientists in a public-private partnership mode.

Public Private Partnership issues for sharing agricultural information using were identified for the data collection instrument based on brainstorming. The issues included, preferred type of partnership (contractual/ consultative/ collaborative/ collegiate), factors for functional partnership such as support for participatory needs assessment and prioritization, content management, infrastructure, costs sharing, maintenance, capacity building, gender, social and attitudinal issues etc, and the role conflicts arising due to mismatching expectations.

The project enabled the testing of integrated ICT model including the participatory needs assessment and prioritization, need-based information support for problem solving and capacity building for sustaining efforts through the information and communication technologies in a public private partnership mode.

Provisions of the Biological Diversity Act, 2002 vis-à-vis allocated business of ICAR / DARE

Certain provisions of the BD Act, 2002 were found to impinge on the allocated business of research and education of DARE/ICAR. These provisions mainly pertained to access to biological resources and knowledge under the Sections 3,4,5,6 and 7 of the BD Act.

Perusal of the various provisions in the Act and allocated business for ICAR/DARE revealed that there are no specific provisions for GRFA as a class in the BD Act, 2002 or the Biological Diversity Rules, 2004. However, the BD Act, 2002 permits exchange or transfer of biological material or information for such approved collaborative projects, which follow GOI guidelines, without making a reference to National Biological Authority (NBA). In view of this provision, general guidelines for transfer of biological resources and information in collaborative projects were found necessary for access and use of biological resources nationally as well as globally as pertaining to the agri-biodiversity component. The project also brought about two main recourses that could be used for bringing about regulatory and operational harmony, viz., (i) expeditious constitution of the committee on Agri-biodiversity [Sec. 13(1)] and making it functional, and (ii) under the provisions of Sec. 16 necessary powers to DAC/DARE needed for carrying out allocated business and also for implementation of the ITPGRFA in India be so delegated and notified accordingly.

Collective wisdom of the NARS was tapped by management of dialogues at national level.

Products from Project:

1. Key elements of the strategy comprised (a) availing of exemption for germplasm exchange under approved a collaborative research projects for which needed guidelines were provided, (b) expeditious consitution of the committee on Agri-biodiversity [Sec. 13(1)] and making it functional, and (c) delegation of necessary powers to DAC/DARE, under the provisions of Sec. 16 of the BD Act, as needed for carrying out allocated business and also for implementation of the ITPGRFA in India, and strategy regarding IPRs on bioresources. In case of plant variety protection, the plant varieties developed by using PGRFA through human intervention could be protected under the PPV&FR Act unhindered as allowed under the Section 6(3) of the BD Act. Prior approval of the NBA and State Biodiversity Board would be required for (i) transfer of knowledge associated with the biological resources (Sec. 19 and 20), (ii) commercial utilization of knowledge generated in the project (Sec. 7), (iii) intellectual rights generated, and (d) benefit sharing as per provisions (Sec. 21 (2) (a to f). The mandate of ICAR Bureaus/NAGS was found to be in harmony with the BD Act. Envisaging alternative centers and arrangements by the NBA for carrying out agri-biodiversity related planning and management would require huge institutional building efforts. Instead, declaration of the bureaus/centers of the ICAR as “repositories” in regard to GRFA (Sc. 39(1)) was suggested which is justifiably warranted.

2. Related guidelines developed: A set of guidelines along with background, scope and purpose, definition of all terms as used in the guidelines under title “Guidelines for Transfer/Exchange of Biological Resources or Information Under

Collaborative Research Projects and Bilateral Agreements / MoU for Research Involving Foreign Individuals/Agencies was developed and has been sent to ICAR/DARE which has corroborated and communicated to NBA for final acceptance.

(a) MTA developed: After studying and improvising the available SMTAs, Model Material Transfer Agreement has been prepared which has been also has been sent to ICAR/DARE. This was corroborated and communicated to NBA for final acceptance.

Consultancy and Policy Support

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Consultancy

Training

The Academy signed an MOU with the Department of Agriculture, Government of Madhya Pradesh. Accordingly, two training programmes on "WTO and its Implications on Agriculture" were organized for the senior officers of MP government where in the programme sensitized the officials to the implications of various international agreements in the post-WTO regime on Indian agriculture and the consequent policy and institutional imperatives for agricultural research systems. The programme also introduced the appropriate instruments and methods for dealing with the WTO concerns and IPR issues for the betterment of farmers and farming in Madhya Pradesh.

The Academy also entered into another MOU with Department of Agriculture, Government of Andhra Pradesh. Under this, two training programmes were organized on the "WTO and its Implications on Agriculture" for the Officers of Department of Agriculture, Govt. of AP from September 11 to 16 and from September 25 to 30, 2006 where in 47 officials were trained. Drs R. Kalpana Sastry, T. Balaguru, and S.K. Soam were the coordinators for these programmes.

UNCTAD

On competitive grounds, the United Nations Conference on Trade and Development (UNCTAD) has sanctioned a project on "Study on socio-economic implications of GI registration for agricultural and non-agricultural commodities/ products" to the Academy. Under this project, about 800 products all over the country have been identified, and finally on the basis of preferential ranking selected 75 products for detailed socio-economic survey of 28 persons for each product in 12 states of the country i.e. Andhra Pradesh, Karnataka, Kerala and Tamilnadu; Central & Northern zone consisting of Madhya Pradesh, Uttar Pradesh, Uttarkhand and Himachal Pradesh; Western zone consisting of Maharashtra, Gujarat, Rajasthan and Punjab. Dr S.K. Soam, Senior Scientist and Dr R. Kalpana Sastry, Principal Scientist are the consultants to this project.

Govt. of Andhra Pradesh

The Department of Agriculture, Govt of Andhra Pradesh requested the Academy to undertake the preparation of Study material on "WTO and its implications on Agriculture" in a simple language, which can be used as a ready reckoner by all the stakeholders including farmers. The booklet is to be used by

Farmers Training Centres (FTCs) spread all over the 23 districts of the state. Dr R.Kalpana Sastry was the consultant for this project.

Spices Board

At the request of Spices Board, the Academy undertook a consultancy on "Evaluation of its Scheme on Research with particular reference to activities of Indian Cardamom Research Institute, (ICRI)". The project consisted of reviewing the present activities, evaluation and also suggesting the strategic plan for ICRI to enhance its institutional capacity so as to address the new challenges and deliver a more responsive, effective, efficient and relevant technology and service outputs to the stakeholders across the cardamom production-consumption chain. Drs T.Balaguru, N.H.Rao, R.Kalpana Sastry and G.P.Reddy were the consultants to this project.

Policy Support

During the period under report, policy level support was provided to various agencies. Some of the significant policy supports provided are listed below.

National Commission on Farmers

Towards overcoming the problems of underemployment and unemployment of agricultural graduates and providing policy support to Government of India and State Governments for reorienting their agricultural education and employment strategies, concrete suggestions were made in the following areas

- Manpower requirement
- Streamlining admission
- Involvement of employees in curriculum design
- Reorienting agricultural education
- Revamping instructional methodology
- Facilitating placement of graduates
- Promoting self-employment
- Incorporating feedback from self-employed graduates

Report on the ARS and NET Examination System

At the instance of ASRB, New Delhi, the report prepared by the Export Team on the ARS and NET Examination System currently being followed was critically reviewed and some useful suggestions were made in the following aspects to bring about improvement in the system.

- Number of subjects
- Syllabus of NET
- Conduct of examination
- Selection of subject
- Selection of ARS
- ARS interview
- Candidates from basic sciences
- Remedial programmes for basic science graduates
- Need for NET

Johl Committee Report

At the instance of ICAR Headquarters, the para-wise amendments to the rules and procedures indicated in Johl Committee Guidelines for training, research and consultancy functions were suggested for consideration of the Council. Since the guidelines were evolved almost a decade back, these amendments were suggested to keep pace with the changing needs.

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Other Events

Other Events

Meeting on Modernization of Instructional and Research Farms of the Agricultural Universities

A meeting was organized to finalize the concept note for the project proposal on "Modernization of Instructional and Research Farms of the Agricultural Universities" on April 12, 2006, under the Chairmanship of Dr S. Prakash Tiwari, Former Director, NAARM. Fifteen faculty members attended the meeting from different Agricultural Universities. The meeting facilitated the finalization of the concept note and the time-schedule for project formulation, which were sent to ICAR Headquarters.

Hindi Fortnight Celebrations

The Academy organized Hindi Fortnight Celebrations from September 1 to 14, 2006. To mark the celebrations, various competitions, which included essay writing, elocution, translation, word making, dictation, general knowledge, memory, singing, noting and drafting in Hindi were conducted to encourage the employees to use Hindi. The fortnight celebrations concluded on September 14, 2006.

On the concluding day, Dr A. Gopalam, Officer-in-charge, Official Language Cell gave a detailed account of the activities of the Official Language Cell and the steps taken by the Academy in promoting the use of Hindi. Addressing the participants Dr R.P. Sharma, Project Director, Project Directorate on Poultry, emphasized the need to implement official language as it acts as the binding force of people across the country. He reiterated to use official language in office procedures and also to speak Hindi in daily life without stressing much on grammar. Dr Sharma distributed prizes to the winners of various competitions. Dr R.K. Samanta, Director-in-Charge, NAARM addressed the gathering.

Foundation Day Celebrations

The Academy celebrated its 31st Foundation day on September 1, 2006. To mark this occasion, Mr Narendra Luther, Former Chief Secretary, Govt. of Andhra Pradesh delivered a special talk on Heritage of Hyderabad and stressed the need to save rocks, which are unique to this part of the region. Earlier, Dr R.K. Samanta,

Director-in-Charge, NAARM, welcomed Mr Luther and outlined the history and activities of the Academy. Dr C. Sriram, Principal Scientist introduced the Chief Guest. Dr D. Rama Rao, Head, ICM Division proposed a vote of thanks. The Directors of sister concerns and Heads of other institutions located in Rajendranagar graced the occasion. All the staff members and the trainees of the various programmes took part in the celebrations, which ended with a scintillating cultural programme.

Satellite Workshops under NAIP

As a follow-up of the Awareness Building Workshops organized by Project Implementation Unit of NAIP in different regions in the country, the Academy was entrusted with the responsibility of organizing a series of Satellite Workshops to cover wider audience. Accordingly, the NAARM faculty members, Drs T. Balaguru, N.H. Rao, and D. Rama Rao, along with the two Help Desk consultants, Drs A. Padma Raju and Sudarshan Rao, organized six Satellite Workshops at Indian Institute of Horticultural Research, Bangalore, on September 8, 2006; at Anand Agricultural University, Anand, on September 18, 2006; at Central Plantation Crops Research Institute, Kasaragod, on September 22, 2006; at Central Research Institute for Jute and Allied Fibres, Barrackpore, on September 23, 2006; at ICAR Research Complex, Patna, on September 25, 2006; and at Central Arid Zone Research Institute, Jodhpur, on September 27, 2006. Around 100 participants representing potential stakeholders attended these workshops organized at these centers.

Financial Review Meeting of Finance and Accounts Officers of ICAR

Financial Review Meeting of Finance and Accounts Officers of ICAR Units was held on November 17, 2006. Dr Rita Sharma, Additional Secretary and Financial Advisor, Department of Agricultural Research and Education (DARE), and Indian Council of Agricultural Research (ICAR), New Delhi, chaired the meeting. Dr Sharma stressed the need for improving the efficiency and effectiveness of the utilization of public funds in agricultural research and development. Addressing the inaugural session of financial review meeting, she said that there was a need to look at WTO in regulatory measures at the national level in the light of developments at the global level. It will help to build new avenues for better trading opportunities and enhance livelihoods in the new competitive global economies.

Shri H.C. Pathak, Director (Finance), ICAR, New Delhi, said that the meeting was organized to review the overall financial management, and implementation of new general financial rules for achieving the organizational goals. One hundred and five Finance and Accounts Officers of various ICAR Institutes participated in the meeting.

Flag Day Celebrations

The NAARM Recreation Club (NRC) has organized Flag Day celebrations on November 24, 2006. On the occasion, an interactive session with Hyderabad Council of Human Welfare (HCHW), which is working for street children and beggars, was organized. The members of the NRC listened to the plight of street children, professional skills & success story of HCHW. The children from streets who rose to respectable levels as engineering graduates, PG holders, tradesmen etc., spoke on the day about their experiences and also on the issue of how beggars were provided necessary inputs for alternative means of living with dignity.

Womens' Day Celebrations

The Women's Cell of the Academy celebrated the International Women's Day on March 8, 2007. The women employees utilized this special occasion to extend help to the poor people by visiting the orphanage centre and old age home at Aramghar in Shivarampalli and distributed fruits and other needy consumer products and groceries. For this noble endeavour, generous contributions were made by the members of NAARM family, which includes 78 participants of 80th FOCARS and also by women employees of sister organizations. The President of the Women's Cell, Dr N. Sandhya Shenoy, coordinated the activities of the Women's Day with the purpose to foster a feeling of kinship among the women employees, irrespective of their cadres.

NAIP Review Meeting

As part of the World Bank Team's visit to Hyderabad to review the progress of NAIP-related activities, a meeting was organized at the Academy on March 5, 2007, to discuss more specifically on the L&CB proposal developed by NAARM under Component 1 of NAIP. Ms Zenete Franca of IFPRI and Dr Stephen Rudgard of FAO visited along with the National Coordinator (NAIP) Dr N.T. Yaduraju. The team discussed with the Director and the senior faculty members of the Academy on the L&CB proposal. The members of the team offered comments and suggestions to improve the proposal. In the light of the suggestions received, the proposal will be revised and resubmitted to NAIP for final approval.

A meeting was also held on March 5, 2007, to discuss the Help Desk activity at NAARM. The Director and senior faculty members of NAARM, Dr Stephen

Rudgard, Ms Zenete Franca, Dr N.T. Yaduraju, and members of M/s Sathguru Management Consultants Pvt. Ltd, Hyderabad, participated in the discussion. During the meeting, the activities of the help desk and the progress made so far were discussed and the major issues that needed further attention were brought out.

Another meeting was organized on March 7, 2007, in which Dr Stephen Rudgard, World Bank Consultant; Dr A.K. Jain from ICAR; Dr U. Balaji from ICRISAT; Dr N.T. Yaduraju from PIU, NAIP, and senior faculty members of NAARM participated. The meeting focused on the Knowledge Management (KM) activities under NAIP and the methodologies to be adopted for institutional workflow. The KM model to be implemented is expected to empower the selected NARS institutions for seamless mining of the agricultural knowledge coming from the NARS faculty and scientists.

ICAR Inter-institutional Sports Meet

The Academy organized the Inter-institutional ICAR Sports Meet (Southern Zone) at Railway Recreation Club grounds, Secunderabad, from March 2 to 6, 2007. Dr S.M. Ilyas, Director, NAARM took salute at the march-past on the Opening Ceremony of the sports meet and inaugurated the tournament. Arjuna awardee Mr P.V. Ramana, Sports Officer, South Central Railway, Secunderabad was the Chief Guest at the Closing Ceremony. Dr S.M. Ilyas, Director, NAARM, delivered the presidential address and gave away the prizes. Dr D. Rama Rao of NAARM was the Organizing Secretary of the Sports Meet.

In all, 612 players from 22 ICAR institutes took active part in the tournament. Ms P. Jeyanthi of NAARM, Hyderabad, was adjudged as the Best Woman Athlete of the Tournament whereas Mr K. Krishnan Nair of CPCRI, Kasaragod, was adjudged as the Best Man Athlete. The Best All Round Sportswoman was Ms K .K. Rukmani Ammal of NAARM and the Best All Round Sportsman champion was Mr K. Krishnan Nair of CPCRI, Kasaragod. The Overall Team Championship was awarded to NAARM, which bagged 71 points.

Awards and Recognitions

NAARM

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Awards and Recognitions

TOLIC Rolling Shield

The Academy won the Rolling Shield from the Town Official Language Implementation Committee, set-up by the Department of Official Language, Ministry of Home Affairs, Govt. of India, for the best performance in implementation of the official language policy of the Union among the Central Government Offices in Secunderabad – Hyderabad twin cities during the year July to December 2006.

Best paper presentation award

The paper titled "Participatory knowledge management - A case of participatory peoples' media" by Dr V.K. Jayaraghavendra Rao, Senior Scientist and Dr N. Sandhya Shenoy, Principal Scientist, NAARM presented at the ISEE National Seminar-2006 on 'Information and Communication Technologies: Opportunities and Challenges for Revitalizing Extension System" held at Navsari Agricultural University, Navsari, Gujarath, from December 27 to 29, 2006, received the best paper presentation award.

Membership of National Committees

Dr Jagannadham Challa, Principal Scientist, was nominated as the Nominee of the Committee for the Purpose of Control and Supervision of Experiments on Animals (CPCSEA), Ministry of Environment and Forests, Govt. of India, on the Institute Animal Ethics Committees (IAEC) for the following institutions during the year 2006-07.

- Bharat Institute of Science and Technology, Managlapally, RR Dist.
- Dr Surapaneni's Genomic Solutions Pvt Ltd. Jubilee Hills, Hyderabad
- Mediciti Institute of Medical Sciences, Ghanpur, RR Dist.
- Reddy's Laboratories Ltd. Bollarum, Medak Dist.
- Vaagdevi College of Pharmacy, Hanamkonda, Warangal Dist.

* Dr T. Balaguru, Head, ARSMP Unit, was nominated as the Member in the Board of Management of the University for the Tamil Nadu Veterinary and Animal Sciences University, Chennai.

* Dr Jagannadham Challa, Principal Scientist (Edn. Tech.) was awarded Fellow of the National Academy of Veterinary Sciences (FNAVS) in May 2006 for outstanding contribution to the advancement of Veterinary Sciences.

Rose Show Awards

The Academy bagged 13 prizes (2 first prizes; 7 second prizes and 4 third prizes) in different categories in 31st Annual Rose Show organized by Hyderabad Rose Society on December 9 and 10, 2006.

The Academy also bagged prizes for best collection of floribunda roses, miniature roses and second highest aggregate points in the rose show, queen of the show (small) apart from winning seven first prizes, five second prizes under different sections of flower display during 21st Annual Rose Show organized by Horticulture Society Secunderabad on December 16 and 17, 2006.

Sports

NAARM sports contingent who won laurels in the ICAR Inter-Zonal Sports Meet held at CIFRI, Barrackpore, from October 27 to November 2, 2006. Mr M.K. Samson won second prizes in shotput and discuss throws and third prize in Javelin throw. Mrs K.K. Rukmini Ammal won first prizes in shotput, discuss and shuttle badminton.

The Academy organized the Inter-institutional ICAR Sports Meet (Southern Zone) from March 2 to 6, 2007 at Hyderabad. Ms P. Jeyanthi was adjudged as the Best Woman Athlete of the Tournament. The Best All Round Sportswoman Champion was Ms K.K. Rukmani Ammal. The Overall Team Championship was awarded to NAARM, which bagged 71 points. The other winning members of the NAARM sports contingent were:

Name of the person(s)	First	Second	Third
Ms P. Jeyanti	100m, 200m, Long jump	—	High jump
Ms K. Rukmani Ammal	Shotput, Discus, Table tennis, Shuttle Badminton – singles & doubles	Javelin	—
Ms G.R. Smitha	Shuttle Badminton Doubles	Shuttle Badminton, Singles, Carrom	100m
Ms G. Aneeja	Javelin	Discus	Shotput
Mr M.K. Samson	Shotput, Discus	—	—
Mr A. Debnath	—	—	Javelin
Mr Khuntia Murmu	—	—	High jump
Mr Sham Bahadur, Mr P.Swamy, Mr P.B.Yadaiah, Mr V. Murali	—	Table Tennis	—
Mr C.G.N. Anand Raja, Mr A. Sejian, Mr P. Venkatesh Mr M. Abbas	—	—	4 x 100 m

Publications

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Publications

Papers published in Journals

S.No	Title	Journal	Author
1.	Management Training Needs of Agricultural Scientists of Indian Council of Agricultural Research.	Indian Journal of Training and Development, XXXVII (2): 136-148, 2006	S. Sontakki Bharat, Samanta, R.K., Sandhya Shenoy, N., and Vijender Reddy, P.
2.	Role Perception of Employees – A Vital Ingredient for Efficiency and Effectiveness of Organization.	ICFAI HRM Review, VI (10): 27-33, 2006	Rao, K.H., Rao, R.V.S., and Anwer, M.M.
3.	Role Perception of Research Personnel in ICAR - an Analysis.	Management Stream, 1: 44-52, 2006	Rao, K.H., Rao, R.V.S., Sontakki, B.S., Reddy, G.P., Kumar, K.V., and Anwer, M.M.
4.	Role Efficacy of Faculty Members in State Agricultural Universities.	ICFAI Journal of Organizational Behaviour, VI (1): 7-17, 2007	Rao, K.H., Rao, R.V.S., Kumar, K.V., and Anwer, M.M.
5.	Constraints in Production and Marketing of Sunflower in Andhra Pradesh.	Journal of Research ANGRAU,34(3): 40-44, 2006.	Reddy, G.P, and Sudhakar Reddy, Y.S.
6.	Potential Applications of Spatial Information Technology in Aquaculture and Inland Fisheries.	Bioinformatics and Statistics in Fisheries Research Eds CIFA, Bhubaneswar, Vol 3: 223-231, 2006.	Reddy M.N, Reddy, G.P., and Sontakki, B.S.
7.	Impact Assessment of Fisheries Research – Concepts and Measurement.	Bioinformatics and Statistics in Fisheries Research, CIFA, Bhubaneswar, Vol.3: 352-377, 2007.	Reddy, G. P., Sontakki, B.S., and Reddy, M. N.
8.	Project Management Practices in Vogue in Research Institutions of National Agricultural Research System: Pointers for change.	The Icfaian Journal of Management Research, 5(10): 54-67, 2006.	Manikandan, P. and Balaguru, T.
9.	Value addition of selected rice hybrids through parboiling.	Oryza Vol. 43. No.1 (1-4): 48-50, 2006.	Naik, R., Murthy, G.R.K., and Viraktmath, B.C.
10.	Group Induced Performance of Agricultural Scientists.	Indian Journal of Extension Education, Vol. 41(1 & 2), 2005.	Sasidhar, P. V. K., Shruti Sethi, and Challa, J.
11.	Patent Cooperation Treaty (PCT): Concept and its Potential for Indian Agriculture.	JNKVV Research Journal 40(1&2): 127-137, 2006.	Balaguru, T. and Kalpana Sastry, R.

12.	Trade in Educational Services: An Overview of GATS and Policy Implications for Higher Agricultural Education in India.	Journal of Agric. Education & Extension (The Netherlands). Vol. 13.(1): 49-68, 2007.	Soam, S.K., Kalpana Sastry, R., and Rashmi, H.B.
13.	Organizational Commitment of Employees at Workplace – Concept and Strategies.	HRM Review, 6 (4): 44-52, 2006.	Rao, K.H and Unnava, H.R.
14.	Water Desorption Characteristics of Raw Goat Meat: Effect of Temperature.	Journal of Food Engineering, 75 (2): 228-236, 2006.	Singh, R.R.B., Rao, K.H., Anjaneyulu, A.S.R., and Patil, G.R
15.	Analysis of Prospective Geographical Indications of India.	Journal of World Intellectual Property. Vol. 8 No.5: 679-705, 2005.	Soam, S.K.
16.	A Review of GATS and Implications for Agricultural Higher Education in India.	JNKVV Research Journal, Vol. 39 (2): 1-11, 2005.	Soam, S.K. and Kalpana Sastry, R.
17.	Some Reflections on Patent Search: A Case Study of Medicinal Plants of India.	Journal of Intellectual Property Rights, Vol. 11: 207-213, 2006.	Soam, S.K. and Rashmi, H.B.
18.	Management of Agricultural Extension in Post-WTO Era – Need for its Strategic Reorientation and Redesign.	Journal of Agricultural Extension Review. 18(1): 17-24, 2006.	Samanta, R.K.
19.	Mathematical Modeling of Thin-Layer Drying Kinetics of Plum in a Tunnel Dryer	Journal of Food Engineering 79: 176-180, 2007	Goyal, R.K.. Kingsly, A.R.P., Manikantan, M.R., and Ilyas, S.M.
20.	Effects of Pretreatments and Drying Air Temperature on Drying Behaviour of Peach Slice	International Journal of Food Science and Technology, 41: 1-5, 2007	Kingsly, A.R.P.. Goyal, R.K., Manikantan, M.R., and Ilyas, S.M.
21.	Thin-Layer Drying Kinetics of Raw Mango Slices	Biosystems Engineering 95(1): 43-49, 2006.	Goyal, R.K.. Kingsly, A.R.P., Manikantan, M.R., and Ilyas, S.M.

Books/Book Chapters/Technical Bulletin

S.No	Title	Publisher/Journal	Author
1.	Regulatory and Operational Mechanisms Related to Agro-biodiversity	NAARM, Hyderabad. (Revised 2nd edition) 216 pages.	Tiwari, S.P.
1.	Changing Roles of Agricultural Extension in Asian Nations.	B.R. Publishing Corporation. New Delhi.	Van den Ban, A.W. and Samanta, R.K.
2.	Agriculture has Changed, so has Agricultural Extension.	Occasional Paper - 16, NAARM, Hyderabad.	Samanta, R.K.

3.	Training Needs Assessment in Key Components of National Agricultural Innovation Project (NAIP).	Survey Report, NAARM, Hyderabad.	Samanta, R.K., Vidyasagar Rao, K., and Sontakki, B.S.
4.	Advances in Agribusiness and Information Technology.	NAARM, Hyderabad.	Reddy, G.P., et al.
5.	Fisheries Research in India – Overview.	NAARM, Hyderabad.	Reddy G.P., Sontakki, B.S., and Reddy, M.N.
6.	Developing Winning Research Proposals in Agricultural Research.	NAARM, Hyderabad. (Revised 2nd edition) 484 pages.	Jagannadham Challa, Rama Rao, D., and Virmani, S.M.
7.	Strategic Initiatives on Bio-technological Interventions for Augmenting Minor Oilseed Production in Andhra Pradesh.	NAARM, Hyderabad 125 pages.	Nanda, S.K., Rama Rao, D., and Kalpana Sastry, R.
8.	Implementation of NAIP in a Consortia Mode.	NAARM, Hyderabad.	Balaguru, T.
9.	Identifying Strategic Issues and Prospective Approaches in Higher Agricultural Education System in India to Face Challenges of GATS.	NAARM, Hyderabad 306 pages.	Soam S.K. and Kalpana Sastry, R.
10.	WTO and its Implications on Agriculture.	Resource Book for Training Programme for Officers of Dept. of Agriculture, Govt. of AP., Hyderabad.	Kalpana Sastry, R., Balaguru, T. and Soam, S.K.
11.	Food Quality and Safety of Raw and Processed Produce	Central institute of Post Harvest Engineering and Technology, Ludhiana	Ilyas, S.M., Uppal, D.S., and Goyal, R.K. (Editors)
12	Post-harvest Technologies in Agriculture	ICAR, New Delhi. In ICAR Industry Meet on "Agricultural Transformation through Public-Private Partnership" (Editors: Ayyappan. S., Chandra, P., and Tandon, S.K.	Ilyas, S.M.
13.	Todai Uparant Phalon ks Uchit Researcher (Hindi)	Directorate of Extension, Dept. of Agriculture and Cooperation, Ministry of Agriculture, New Delhi	Ilyas, S.M., and Goyal, R.K.
14.	Post-harvest Technology and Value Addition	Indian Institute of Pulses Research, Kanpur. Advances in Mungbean and Urdbean. (Editors : M. Ali and S. Kumar)	Ilyas, S.M., and Goyal, R.K.

Faculty News

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Faculty News

Paper presented and published in proceedings of Seminars / Conferences / Workshops / Symposia etc.

S.No	Title of the paper	Name of the Seminar/Conference	Presented by
1.	Strengthening Research-Extension Linkages for Effective Delivery of Agricultural Technologies : Human Centered Approach.	Research-Extension Linkages for Effective Delivery of Agricultural Technologies in SAARC Countries at NAARM, Hyderabad, November 20 - 22, 2006.	Samanta, R.K. and Sontakki B.S.
2.	Agricultural Technology Transfer and Its Commercialization – The Extension Management Perspective : An Indian Experience.	International Seminar on Best Practices of Agricultural Technology Transfer and Commercialization, at Islamabad, Pakistan, organized by APO, Japan, NPO and PARC, Pakistan, December 4 - 8, 2006.	Samanta, R.K.
3.	Ecological – Economic Linkages of Agricultural Biodiversity for its Conservation and Augmentation for Sustainable Livelihood and Environment, in International Policy Consultations for Learning from Grassroots Initiatives and Institutional Interventions.	IIM Ahmedabad, India, May 27 - 29, 2006.	Reddy, G.P.
4.	Economic Impact of Patents in training programme on IPRs and Patents Procedures.	ANGRAU, Hyderabad, June 12 - 15, 2006.	Reddy, G.P.
5.	WTO Implications on Export of Agrifood Based Products in training programme on Food Enterprises – Opportunities and Challenges.	July 12 - August 1, 2006.	Reddy, G.P.
6.	Screening and Prioritizing Poultry Research Projects.	Proceedings of National Seminar (November 2-3, 2006). Central Avian Research Institute, Izatnagar. pp. 293-301, 2006.	Soam, S.K., Sasidhar, P.V.K., and Sontakki, B.S.
7.	Training Needs for Learning and Capacity Building (L&CB).	National Workshop on Training Needs for L&CB under NAIP held at NAARM, Hyderabad from June 20 - 21, 2006.	Samanta, R.K.., Vidyasagar Rao, K., and Sontakki, B.S.

8.	The Concept, Measurement and Potential of Total Factor Productivity (TFP) Index", in Assessing the Impact of Fisheries Research.	Impact Assessment of Fisheries Research in India" at CMFRI, during July 3 - 4, 2006 at Kochi.	Reddy, M.N.
9.	i) Mapping and Assessment of Spatial and Temporal Trends of Rice Yield Response to Fertilizer in Andhra Pradesh and Orissastates in India. ii) Mapping and Assessment of Spatial and Temporal Trends in Diversification of Foodgrain Crops- A case study of Andhra Pradesh	Asia Pacific Environmental Systems Research Institute (ESRI) GIS Users Conference at Taj Palace, New Delhi on January 18 -19, 2007.	Reddy, M.N., Rao, N.H., Kumar, K.V. Reddy, K.V., and Rao, K.S.
10.	Potential Applications of Spatial Information Technology in Aquaculture and Inland Fisheries.	Bioinformatics and Statistics in Aquaculture Research at CIFA, Bhubaneswar during January 22 - 25, 2007.	Reddy, M.N., Reddy, G.P., and Sontakki, B.S.
11.	Strategic Environmental Assessment of the Agricultural Sector.	National Training Workshop on Institutionalizing Strategic Environmental Assessment (SEA) in India, organized by the Administrative Staff College of India, Hyderabad, December 8, 2005.	Rao, N.H.
12.	GIS Based Decision System for Sustainable Crop-Livestock Management.	ESRI User Conference, New Delhi, Dec. 2005.	Rao, K.H., Reddy, G.P., Kumar, K.V., Reddy, M.N., and Rao, N.H.
13.	Knowledge Driven Agricultural Development: A Framework For Implementing Information and Communication Technologies.	National Convention on Knowledge Driven Agricultural Development: Management of Change organized by ARS Scientists' Forum and ICAR, at IARI, New Delhi, Mar 24 - 26, 2006 (invited lead paper).	Rao,N.H.
14.	Demand of Agricultural Graduates in Private Sector.	SDSI Conference, Gauhati, 2006.	Nanda, S. K., Rama Rao, D., and Vizayakumar, K.
15.	Strategies for Biodiesel Development.	Experts Group Discussion on Non-edible Grade Vegetable Oils as a Source of Decentralized Power Production, MNES, Chennai, April 24, 2006.	Nanda, S. K., Rama Rao, D., and Kalpana Sastry, R.

16.	Capacity Building for Manpower in Water Management.	Paper presented at INDO-US Workshop on Innovative E-technologies for Distance Education, Extension/ Outreach in Efficient Water Management, ICRISAT, March 5 - 9, 2007.	Rama Rao, D., and Nanda, S. K.
17.	Strategies for Biodiesel Development.	Experts group discussion on Non-edible Grade Vegetable Oils as a Source of Decentralized Power Production, MNES, Chennai, April 24, 2006.	Rama Rao, D.
18.	Evaluation of Fertilizer Applicator for Direct Seeding.	41st ISAE Convention and Symposium, Junagadh Agril. University, Janaury 29 - 31, 2007 at Junagadh.	Sarma, I.S.R.P., Murthy, G.R.K., Hema Sankari, and Kumar, R.M.
19.	Principles and Management of National Agricultural Research Project.	Satellite Workshop held at the Central Plantation Crops Research Institute, Kasargod, on September 22, 2006.	Balaguru, T.
20.	Empowerment of the KVKs with Technologies: How to Backstop in a System Perspective.	National Conference on KVK 2005 held at New Delhi, on October 27 - 28, 2006.	Raman, K.V., Balaguru, T. and Samanta, R.K.
21.	R & D Efforts in Implementation of PPVFR Act, 2001. Biodiversity, Traditional Knowledge and Intellectual Property?	NALSAR Conferences in Collaboration with Max Planck Institute for Intellectual Property, Competition and Tax Law, Munich and WIPO, Geneva, during November 16 - 17, 2006.	Kalpana Sastry, R.
22.	Promotion of International Trade.	5th International Conference on Indian Dairy Industry at AGROTECH organized by CII on December 2, 2006.	Kalpana Sastry, R.
23.	IPR Issues Related to Agriculture.	Seminar on Thematic Areas, during Golden Jubilee Celebrations of Marthawada Agricultural University, Parbhani, Maharashtra. On December 30, 2006.	Kalpana Sastry, R.

24.	Present Mechanisms of Protection of Innovations in Plant Protection in India.	National Conference on Organic Waste Utilization and Eco-friendly Technologies for Crop Protection March 15 -17,2007, Organized by Plant Protection Association of India and NBPGR, Hyderabad.	Kalpana Sastry, R.
25.	Networking Agricultural Research, Education and Extension Institutes Through ICTs.	Dhrubhai Ambani International Institute for Information and Communication Technology (DAIICT), Gandhinagar, Ahmedabad, from June 14 -16, 2006. Organized by the IAITA (Indian Association for Information Technology in Agriculture) and (DAIICT),	Sandhya Shenoy, N. Rama Rao, D. and Murthy, G.R.K.
26.	ICTs for Extension in Agriculture and Rural Development.	National Seminar on Extension Strategies for Fostering Knowledge Centred Agricultural Growth, organized by the Society of Extension Education (SEE) and Annamalai University from December 2- 4, 2006 at Pondicherry.	Sandhya Shenoy, N. Rama Rao, D. , and Murthy, G.R.K.
27.	Participatory Knowledge Management- A case of Participatory Peoples' Media.	ISEE National Seminar-2006 on 'Information and Communication Technologies: Opportunities and Challenges for Revitalizing Extension System' organized by the Indian Society of Extension Education from December 27 - 29, 2006 at Navsari Agricultural University, Navsari, Gujarat.	Jayaraghavendra Rao, V.K. and Sandhya Shenoy, N.
28.	Curriculum in Indian Agricultural Education.	Indo US Conference held at GBPUAT, Pantnagar, during June 6 - 7, 2006.	Gopalam, A.
29.	Educational Technologies and Teaching Methods with special reference to PG Education in Agriculture.	Indo US conference held at NAAS, New Delhi. during January 22 - 23, 2007.	Gopalam, A.
30	Strategic Options for Curriculum Development in Indian Agricultural Education.	Indian Science Congress held at ANGRAU, Hyderabad on January 3 - 7, 2007.	Gopalam, A.
31.	Food Engineering Trends	National Conference on Food Technology Evolution from Conventionality at Osmania University, Hyderabad on February 24, 2007	Ilyas, S.M.

Participation in Training Programmes / Seminars / Conferences / Workshop / Symposium / Meeting

S.No	Name of the programme	Organized by / at	Attended/Presented by
1.	National Conference on Agricultural Marketing.	Indian Society of Agricultural Marketing, Nagpur, from February 22 - 24, 2007.	Reddy, G.P.
2.	International Conference on 21st Century Challenges to Sustainable Agri-food System, Biotechnology, Environment, Nutrition, Trade and Policy.	University of Agricultural Sciences, Bangalore, from March 15 - 17, 2007.	Reddy, G.P.
3.	National Fisheries Development Board.	NFDB at ANGRAU, Hyderabad, on September 09, 2006.	Sontakki, B. S.
4.	Zonal Workshop on Fisheries and Aquaculture Policy.	CIFE, Mumbai and PREPARE, Chennai, at MANAGE, Hyderabad, from March 22 - 24, 2007.	Sontakki, B. S.
5.	NIC Web Services on Oilseeds Development.	NIC Hyderabad on May 31, 2006.	Rama Rao, D.
6.	NAIP progress review meeting.	PIU, NAIP, Delhi, on May 9, 2006	Rama Rao, D.
7.	NAIP Training workshop on Value Chain.	PIU, Delhi, from June 5 - 9, 2006	Rama Rao, D.
8.	Open Access in Agricultural Sciences.	ICRISAT, Hyderabad, during November 6 - 7, 2006	Rama Rao, D.
9.	Progress Review Meeting.	PIU, Delhi, during November 14 - 15, 2006.	Rama Rao, D.
10.	MDP on Managerial Leadership and Conflict Resolution.	IIM, Kolkata, from August 28 to September 2, 2006.	Manikandan, P. and Anwer, M.M.
11.	Microsoft .Net Technologies.	Orbit Technologies, Hyderabad, during August 16 - 25, 2006.	Reddy, M.N., Reddy, K.M., and Murthy, G.R.K.
12.	Vice Chancellors' Conference	ICAR, held at NASC, New Delhi, during February 21 - 22, 2007.	Ilyas, S.M.

13.	Academic Council of MANAGE	MANAGE, Hyderabad on March 12, 2007	Ilyas, S.M.
14.	Joint Meeting of CWC-CIPHET- DRR collaborative project "Assessment of Storage Losses in Rice in A.P"	CIPHET, Ludhiana held at Central Warehousing Corporation, New Delhi, on March 15, 2007.	Ilyas, S.M.
15.	Meeting of the Experts Committee-cum-Jury of National Productivity Award on "Animal feed processing units"	National Seed Corporation of India, New Delhi on March 19, 2007.	Ilyas, S.M.
16.	Stakeholders'Workshop on Development of Full Proposal for Funding Component 2 (Production to Consumption System) of NAIP, on Standardization and Commercialization of Curcuma longa, Zingiber Officinalis and Camellia Sinensis based Products.	M/s Natural Remedies Pvt. Ltd., Bangalore, on March 28, 2007.	Ilyas, S.M.
17.	Executive Development Programme on Organizational Excellence Through Leadership.	IIM, Kolkata, from February 5 - 8, 2007.	Samanta, R.K.
18.	NAIP Implementation Support Review Mission of World Bank Team Meeting.	PIU, New Delhi, on February 28, 2007.	Balaguru, T.
19.	5th Biennial National Competition for Innovations Campaign in AP.	Honey Bee-AP Chapter & National Innovation Foundation (NIF), on May 18, 2006.	Kalpana Sastry, R.
20.	Awareness Programme on Protection of Plant Varieties and Farmers Rights Act and Seed Sector.	Biotech Consortium on August 5, 2006.	Kalpana Sastry, R.
21.	International Conference of Impact of TRIPs-INDO-US Exchange.	NALSAR University of Law and University of Oklahoma College of Law and Michigin State University of Law, during December 15 -16, 2006.	Kalpana Sastry, R.
22.	Personality Development.	M/s Landmark Education, Hyderabad, from January 26 - 30, 2007.	Rao, K.H.

Foreign Visits

Dr S. Prakash Tiwari, Director, NAARM, participated in the Standard Material Transfer Agreement (SMTA) Contact Group Meeting in Bangkok, held from April 15-16, 2006. The meeting, convened with the 12 Asian Representatives, was hosted by Asia-Pacific Association of Agricultural Research Institutions (APAARI) that formed the Standard Material Transfer Agreement (SMTA) Contact Group and was co-sponsored by International Plant Genetic Resources Institute (IPGRI). Participation in the Contact Group Meeting would help in further negotiations regarding the SMTA. Based on the deliberations, all the details were communicated to the Director, NBPGR, who could make use of the Asian Consensus in regard to material transfer agreement in the national scenario. This visit would also help in the implementation and monitoring of ITPGRFA – related activities.

Dr S. Prakash Tiwari, Director, NAARM, attended the First Session of the Governing Body of International Treaty on Plant Genetic Resources for Food and Agriculture (IGPGRFA), held from June 12 to 16, 2006, at Madrid, Spain. Around 350 representatives of 120 countries and the European Union attended the meeting. The visit resulted in presenting and defending the Indian and Asian position in regard to the plant genetic resources for food and agriculture and their exchange under the multilateral system of the IGPGRFA. Benefit sharing, in particular, was well negotiated. Among other outcomes, the Standard Material Transfer Agreement could be finalized during the meeting. As a result of the recommendations and adoption of documents and procedures during this first Governing Body Meeting of the ITPGRFA, the genetic resources will have facilitated access, sustainable use, and equitable benefit sharing arising from the use thereof.

Dr G.R.K. Murthy, Sr. Scientist attended 32-day training programme on "Distance learning strategies for Indian agricultural system" under Indo-US Agricultural Knowledge Initiative with Borlaug Fellowship at Ohio State University, Columbus (US), from October 2 to November 3, 2006. The programme was oriented to identify and profile the e-learning methodology in distance education mode in OSU campus and to identify the scope and constraints in distance education. Various content management resources like moodle, desire to learn for managing the courses in distance learning framework were studied. The technological resources like video streaming, conferencing for effective online learning were also studied during the period of training.

Dr R.K. Samanta, Director-in-Charge, attended an international seminar on "Best practices of agricultural technology transfer and commercialization" organized by Asian Productivity Organization (APO), Tokyo, Japan at APO, Islamabad, Pakistan from December 4-8, 2006 and presented the country paper on Agricultural Technology Transfer and its commercialization – The Extension Management Practices: An Indian Experience.

Visitors

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Visitors

Visitors

Mr Samdrup Rigyal, Deputy Director (Policy Planning) and Mr Akhter Houssain Chowdhury, Senior Finance Officer, SAARC Agricultural Information Centre (SAIC), Dhaka, Bangladesh, visited the Academy on July 10, 2006.

Seven delegates from Oman, Sri Lanka, Cambodia, Zambia, Sudan, Myanmar and Uzbekistan, who underwent training on Trainers' Training in Entrepreneurship Development at National Institute of Small Industry Extension Training (NISIET), Hyderabad, visited the Academy on September 8, 2006.

Three scientists from Paschim Banga Go-Sampad Bikash Sanstha (PBGSBS), Government of West Bengal, headed by Dr S. Saha, joint Director, Department of A.R.D., Govt. of West Bengal visited the Academy on September 27, 2006.

Dr P. Anandajayasekeram, Manager, Capacity Strengthening (CaSt) Unit, International Livestock Research Institute, Addis Ababa, Ethiopia, visited the Academy on January 18, 2007

Students' visit: A total of 375 students visited the Academy during this period. These students belonged to various colleges of Tamil Nadu Agricultural University, Coimbatore; Tamil Nadu Veterinary and Animal Sciences University, Chennai; University of Agricultural Sciences, Bangalore; Adhiparasakthi Agril College Kalavai (TNAU); Agricultural College & Research Institute, Vallanadu (TNAU); Home Science College & Research Institute, Madurai (TNAU); Pandit Jawaharlal Nehru College of Agriculture & Research Institute, Karaikal (TNAU); Kuvempu University, Shakaraghatta.

Committees

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Committees

Committees

Research Advisory Committee

Dr Y.L. Nene — Chairman
Former DDG (ICRISAT)
ICRISAT Colony
Brig Sayeed Road
Secunderabad

Dr A.M. Krishnappa — Member
Former Vice Chancellor
University of Agricultural Sciences
8th A Main Road, Uttyarhalli
Bangalore

Dr I.V. Subba Rao — Member
Former Vice Chancellor
Acharya N.G.Ranga
Agricultural University
Main Vikas Nagar,
Hashmat Pet Road
Secunderabad

Dr (Mrs) Vijay Khader — Member
Formar Dean
College of Home Science
Acharya N.G.Ranga
Agricultural University
Hyderabad

Dr P. Reddy — Member
Agri Biotech Foundation
ARI Campus
Rajendranagar, Hyderabad

Dr S.M. Virmani — Member
Advisor
Indian Resources Information
and Management Technology
Hyderabad

Dr S.P. Tiwari — Member
DDG (Edn.), ICAR,
Krishi Anusandhan Bhavan – II
Pusa, New Delhi

Sh Madhukarrao Mulay — Member
'Shivneri' Bansilal Nagar
Aurangabad

Dr D.P. Tripathi — Member
N-9-6249
Vasant Kunj
New Delhi

Dr D. Rama Rao — Member Secretary
Head, ICM Division
NAARM
Hyderabad

Institute Management Committee

Dr S.M. Ilyas — Chairman
Director
NAARM, Hyderabad

Dr R.K. Mishra — Member
Director
Institute of Public Enterprises
Hyderabad

Dr J.H.Kulkarni — Member
Vice Chancellor
University of Agricultural Sciences
Dharwad, Karnataka

Dr S. Raghuvardhan Reddy — Member
Vice Chancellor
Acharya N.G. Ranga Agricultural
University (ANGRAU)
Rajendranagar
Hyderabad

Sh Madhukarrao Mulay — Member
'Shivneri', Bansilal Nagar
Aurangabad, Maharashtra

Dr D.P. Tripathi — Member
N-9-6249, Vasant Kunj
New Delhi

Dr Y.S. Ramakrishna Director Central Research Institute for Dryland Agriculture (CRIDA) Santosh Nagar Hyderabad	Member
Dr D.M. Hegde Director Project Directorate of Oilseeds Research (DOR) Rajendranagar Hyderabad	Member
Dr N. Seetharama Director NRC for Sorghum Rajendranagar Hyderabad	Member
Dr P.K. Joshi Director National Centre for Agricultural Economics and Policy Research New Delhi	Member
Dr B.S. Bisht Assistant Director General HRD-III Krishi Anusandhan Bhavan II Pusa, New Delhi	Member
Mr V.S. Subramanian Finance and Accounts Officer NAARM, Rajendranagar Hyderabad	Member
Mr M. Suresh Kumar Chief Administrative Officer NAARM, Rajendranagar Hyderabad	Member-Secretary

NAARM

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Personnel

Personnel

Management Positions

S.M. Ilyas, Director (w.e.f. February 8, 2007)
S. Prakash Tiwari, Director (up to July 12, 2006)
R.K. Samanta, Acting Director (from July 12 to February 7, 2007)
R.K. Samanta, Joint Director

Scientific Positions

T. Balaguru, HOD, ARSMP
P. Manikandan, HOD, HRD
D. Rama Rao, HOD, ICM
C. Sriram, Principal Scientist
A. Gopalam, Principal Scientist
Jagannadham Challa, Principal Scientist
K. Vidyasagar Rao, Principal Scientist (up to February 28, 2007)
K.M. Reddy, Principal Scientist
M.M. Anwer, Principal Scientist
M. Narayana Reddy, Principal Scientist
N. Hanumantha Rao, Principal Scientist
R. Kalpana Sastry, Principal Scientist
N. Sandhya Shenoy, Principal Scientist
S. K. Nanda, Senior Scientist
G.P. Reddy, Senior Scientist
R.V.S. Rao, Senior Scientist
K. Hanumantha Rao, Senior Scientist
S.K. Soam, Senior Scientist
V. K.J.R. Rao, Senior Scientist
B. S. Sontakki, Senior Scientist
G.R.K. Murthy, Senior Scientist

Technical Positions

Grade T (7-8)
R.V.V.S. Prakasa Rao, Editor
V. Murali, Garden Superintendent
A. Debnath, Medical Officer
Zameer Ahmed, Manager (Hostel services)
M.A. Basith
Ch. Janardhan Rao

Grade T-6
D. Venkateswarlu
P. V. Nirmala
K.V. Kumar
P. Vijender Reddy

Grade T-5
N.R. Nageswara Rao
P. Namdev
Sohail Ahmed Khan
Bansidhar Nayak
L. Venkateswarlu (up to May 4, 2006)
G. Aneeja
P. Mohan Singh
L. Ramesh
M. Shekhar Reddy
B. Veeraiah
Ahire Laxman
N. Naresh Kumar

Administration & Finance

M. Suresh Kumar, CAO
V.S. Subramanian, F&AO
Y. Sankara Rao, Asst. Admn. Officer
P.P. Brahmaji, Asst. Admn. Officer
C. Bagaiah, Junior Accounts Officer

Private Secretaries
L. Jhansi Lakshmi
Sarada Samanta
N. Raghunath

Asst. Directors (Hindi)
J. Renuka
S. Pradeep Singh

Security Officer
B.Ch. Satyanarayana

Personalia

Welcome

Dr S.M. Ilyas assumed the charge as Director of NAARM on February 8, 2007. Prior to joining the Academy, Dr Ilyas was Vice Chancellor at Narendra Dev University of Agriculture and Technology, Kumarganj, Faizabad, and earlier to that he was Director at Central Institute of Post Harvest Engineering and Technology, Ludhiana.

Mr M. Ravi joined as Photographer (T-4) on November 1, 2006. Earlier, he worked at CIBA, Chennai as Photographer for 11 years from 1995 to 2006.

Promotions

Name	from	to	w.e.f.
L. Ramesh	T-4	T-5	1-1-2005
M.K. Sonkusare	T-3	T-4	1-1-2005
ACPRN Rao	T-3	T-4	1-1-2005
K. Shivaiah	T-3	T-4	26-5-2005
D. Rajagopal	T-3	T-4	17-5-2005
M. Sekhar Reddy	T-4	T-5	1-1-2005
P. Vijender Reddy	T-5	T-6	1-8-2005
B. Veeriah	T-4	T-5	1-1-2005
L.M. Ahire	T-4	T-5	23-9-2005
N. Naresh Kumar	T-4	T-5	1-1-2005
Sataiah	SSG-I	SSG II	29-1-2005
P. Swamy	SSG-III	SSG IV	29-1-2005
Phool Kumar	SSG-III	SSG IV	29-1-2005
Khalid	SSG-III	SSG IV	29-1-2007

Higher Studies

Dr D. Venkateswarlu, was awarded the degree of Doctor of Philosophy (Ph.D) in Hindi from the School of Humanities, University of Hyderabad. His Ph.D. Thesis is titled “Rashtreeya Krishi Anusandhan Sansthano Mein Hindi Ka Prayog: Seemaen Evam Sambhavanaeyen”.

Dr J. Renuka, was awarded the degree of Doctor of Philosophy (Ph.D) in Hindi by Dr B.R. Ambedkar Marathwada University, Aurangabad, for her research work on “Jan Sanchar Kshetra Mein Staneeya Bhashaon Ki Sampreshaneeyata”.

Retirement

Dr K. Vidyasagar Rao, Principal Scientist, superannuated on February 28, 2007, after completing 36 years of service in the ICAR, of which the last 19 years were at NAARM.

Mr L. Venkateswarlu, Technical Officer (T-5), took voluntary retirement on May 4, 2006.

Ms K. Kalavathi, SSG II, retired on superannuation on June 30, 2006.

Acronyms

AHRD	:	Agricultural Human Resource Development
AoA	:	Agreement on Agriculture
ARIS	:	Agricultural Research Information System
ARS	:	Agricultural Researach Service
AP Cess	:	Agricultural Produce Cess
ATIC	:	Agricultural Technology Information Centre
CAO	:	Chief Administrative Officer
CAT	:	Centre for Advanced Technology
CBD	:	Convention on Biodiversity
COL	:	Commonwealth of Learning
DARE	:	Department of Agricultural Research and Education
DSS	:	Decision Support System
DST	:	Department of Science and Technology
FAO	:	Food and Agriculture Organization
GATT	:	General Agreement on Tariffs and Trade
GDP	:	Gross Domestic Product
GFR	:	General Financial Rules
GIS	:	Geographical Information System
GOI	:	Government of India
HRD	:	Human Resource Development
IPR	:	Intellectual Property Rights
ISNAR	:	International Service for National Agricultural Research
IT	:	Information Technology
KVK	:	Krishi Vigyan Kendra
L&CB	:	Learning and Capacity Building
MOA	:	Memorandum of Agreement
MOU	:	Memorandum of Understanding
NAP	:	National Agricultural Policy
NAIP	:	National Agricultural Innovation Project
NARP	:	National Agricultural Research Project
NARS	:	National Agricultural Research System
NATP	:	National Agricultural Technology Project
NGO	:	Non-Government Organization
O&M	:	Organization and Management
PERT	:	Programme Evaluation and Review Technique

PRA	:	Participatory Rural Appraisal
R&D	:	Research and Development
R&E	:	Research and Extension
SAUs	:	State Agricultural Universities
S&T	:	Science and Technology
SAC	:	Scientific Advisory Committee
SAARC	:	South Asian Association for Regional Cooperation
TRIP	:	Trade Related Intellectual Property
UNCTAD	:	United Nations Conference on Trade and Development
UNDP	:	United Nations Development Programme
VLC	:	Virtual Learning Centre
WTA	:	World Trade Agreement
WTO	:	World Trade Organization