

NAARM ANNUAL REPORT 2003-2004

वार्षिक प्रतिवेदन
Annual Report
2003-2004



राष्ट्रीय कृषि अनुसंधान प्रबंध अकादमी

राजेन्द्रनगर, हैदराबाद-500 030, भारत

NATIONAL ACADEMY OF

AGRICULTURAL RESEARCH MANAGEMENT

Rajendranagar, Hyderabad-500 030, India

Contents

Preface	
Executive Summary	7
Introduction	11
Training Achievements	19
Workshops, Conferences, Meetings, etc.	33
Feedback	43
Theme paper	
Training : An Effective Tool for Capacity Building - Tips for its Success	44
Research Achievements	51
Academic Research	64
Policy Studies and Consultation	72
Publications	79
Faculty News	85
Honours and Awards	95
Visitors	97
Personnel	99
Karyakari Saransh (Hindi)	107

Preface

It gives me immense pleasure in presenting this document as a comprehensive record of the Academy's activities and accomplishments during 2003-2004. The Academy has completed 27 years of dedicated service to the nation. During these years the Academy has made significant contribution in manpower development in National Agricultural Research System (NARS) of India, and also other developing countries in South Asia and Africa. The Academy has also taken up research and consultancy projects and services, depending upon the specific needs of the clientele organizations. The international collaboration with Sri Lanka, South Africa, and the FAO, Rome provided excellent experience, which led to a positive impact on the Academy's performance.



Significant achievements of the year was the recast of Foundation Course for Agricultural Research Service based on the third QRT recommendations and changing global and national scenario and challenges. During this period, 50 programmes were held, and a total of 1354 scientists, teachers, administrators and finance officers were trained. Five off-campus programmes, two international programmes for Sri Lankan scientists and administrators, and two ICAR sponsored Summer Schools were the other highlights of the year. This year, two of our colleagues were 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.

Research projects were prioritized with reference to the current needs. Course modules on agricultural research management, information technology and HRD were developed. A GIS based product, Spatial Information System for Agricultural Production and Resources (SISAg), was developed. Infrastructure development received due emphasis in terms of steps for development of GIS Laboratory and Virtual Learning Centre, International Guest House and Scientists' Home. Keeping in view the importance and topicality of the subject, this year's Annual Report carries the theme paper entitled "Training : An Effective Tool for Capacity Building - Tips for its Success".

The efforts brought recognition to the Academy in different forms. Dr T. Balaguru, Head, ARSMP Division received "Bharat Excellence Award" and "Rising Personalities of India Award". The ICAR Inter-institutional Tournament (Zone III) was hosted by the Academy, and NAARM won second over

all team championship and the best all rounder in both men's and women's section. The Academy also bagged several trophies at the Annual Rose Show organized by A.P. Horticultural Society.

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, Director General, ICAR, and Secretary, DARE, Govt. of India; Mrs Sashi Mishra, Secretary, ICAR, New Delhi; Dr J.C. Katyal, DDG (Education), ICAR. Also, I am grateful to various Directors, administrative and finance officers of ICAR for their cooperation and advice from time to time.

Thanks are due to the Editorial Board, especially my esteemed colleagues Drs D. Rama Rao, T. Balaguru, P. Manikandan and B.S. Sontakki in bringing out this Annual Report. The assistance of Mr R.V.V.S. Prakasa Rao and Mr P. Namdev in layout design and printing is highly appreciated. All the faculty members and Heads deserve appreciation for their timely supply of information. I compliment all technical, administrative and supporting staff as well as trainees, students and research associates for their meaningful contributions to the Academy in its endeavour.

Hyderabad,
August 17, 2004.


(R.K. Samanta)
Acting Director



Executive Summary



The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that every entry, no matter how small, should be recorded to ensure the integrity of the financial statements. This includes not only sales and purchases but also expenses, income, and any other financial activity. The document also highlights the need for regular reconciliation of accounts to identify any discrepancies early on.

Next, the document covers the process of classifying transactions into different accounts. It explains how to use the chart of accounts to categorize each entry correctly. This step is crucial for ensuring that the financial statements are prepared according to the appropriate accounting standards and regulations. The document provides examples of how to classify various types of transactions, such as sales of goods, purchases of inventory, and payment of expenses.

The third part of the document focuses on the preparation of the financial statements. It details the steps involved in calculating the total revenue, expenses, and net income. It also discusses the importance of presenting the information in a clear and concise manner, using appropriate formats and headings. The document provides a step-by-step guide to preparing the income statement, balance sheet, and statement of cash flows.

Finally, the document concludes with a discussion on the importance of reviewing and auditing the financial statements. It emphasizes that the statements should be reviewed carefully to ensure that they are accurate and complete. It also mentions the role of an external auditor in providing an independent opinion on the financial statements. The document stresses that maintaining accurate records and following proper accounting procedures are essential for the success of any business.

Executive Summary

The activity at NAARM has witnessed major evolution from the status of imparting training to ARS probationers to expose the various strata of agricultural research institutions to the latest state-of-art methodologies in human, information, communication and project management. NAARM is bestowed with the responsibilities of organizing training programmes, workshops, and seminars to keep pace with the latest trends in the specialized areas of agricultural research, information technology and education management to the personnel of National Agricultural Research System (NARS) which includes the institutes of Indian Council of Agricultural Research and State Agricultural Universities.

A variety of training programmes were organized by the Academy for the benefit of scientists / faculty from Agricultural Universities and research institutes within the country and abroad. During the period under report 50 such programmes were held, and a total of 1354 scientists, teachers, administrators and finance officers participated in these programmes. The Academy conducted five off-campus programmes on Educational Methodology and Instructional Technology (EMIT) at Marathwada Agricultural University, Parbhani, Veterinary College, Udgir and Bombay Veterinary College, Mumbai. The thematic representations in these trainings were on teaching learning, behavioural technology and the HRD dimensions. As a part of the capacity building activities initiated by NAARM towards improving the research management capabilities of scientists in the North-Eastern region, a special programme on Agricultural Research Project Management was organized at CAU, Imphal. A total of two hundred and thirty five participants got benefitted in these programmes.

Under the work plan signed between ICAR and Council for Agriculture Research and Policy (CARP) in Sri Lanka for 2003-04, two International training programmes on "Agricultural Research Management" were organized for 26 directors of various research institutes from Sri Lanka.

During the bygone year, the Academy hosted two Summer Schools viz. Recent Advances in Agricultural Research Project Management and Optimizing Learning Teaching by the Development of Multimedia Courseware for the faculty of SAUs. In all sixty seven scientists from ICAR institutes and SAUs participated and got benefitted.

As a part of NATP activity, a Discussion Meeting on Performance Assessment of Agricultural Research Organizations was organized to critically

examine the developed methodology, based on selected case studies and to finalize the same. Under Computer Aided Materials Production three CAI modules on Soil Science, Management of People and Educational Technology Terms and Concepts were developed.

Course modules on agricultural research management, information management and HRD were developed and added to the virtual learning on NAARM website. The website is also being used by the faculty in the class room lectures during the trainings on computer applications and web designing.

A GIS based product, SISAg (Spatial Information System for Agricultural Production and Resources) was developed. SISAg is user-friendly software that combines GIS maps of States and Agro-ecological regions of India at the State level of agricultural production, resources and socioeconomic development indicators of relevance to agricultural research policy and planning. It allows users to map, update and analyze the data. SISAg does not require users to have access to GIS software as it is developed in Visual Basic and MapObjects and can be used on any system operating on MS Windows. SISAg can be downloaded free from NAARM website.

A video programme on Dr M.S. Swaminathan, Chairman, M.S. Swaminathan Research Foundation was produced. This includes a biographical sketch and an interview with him. This programme is proposed to be shown to scientists under training in the academy to inspire them to achieve greater heights in their career. Twenty-four video programmes on different topics were produced during the training of the foundation course scientists in video communication.

The Academy bagged the Prince of the Show Trophy at the XXVIII Annual Rose Show organized by the Hyderabad Rose Society at the Sarovar Complex, Hyderabad on December 13 and 14, 2003. The Academy also bagged Queen of the Show Trophy, Best Collection of Floribunda Roses Trophy, Best Collection of Polyantha Roses Trophy, Best Institutional Rose Garden Trophy at XVIII Annual Rose Show organized by the Horticultural Society, Secunderabad.

The ICAR Inter-Institutional Tournament (Zone III) was hosted by the Academy and was conducted at Railway Recreation Club grounds, Secunderabad from November 3 to 7, 2003. The best all rounder in the men's section was M.K. Samson of NAARM, and best all rounder in the women's section was K.K. Rukmani Ammal of NAARM.



Introduction





Introduction

The National Academy of Agricultural Research Management (NAARM) was established by the Indian Council of Agricultural Research (ICAR) at Hyderabad, in 1976, to fulfil an important need to address issues related to agricultural research and education management. In the initial years, it primarily imparted foundation training to the new entrants of the Agricultural Research Service of ICAR. Subsequently, its role expanded to include training all categories of scientists, faculty members, administration and financial personnel of Indian National Agricultural Research System (NARS), as well as those from other developing country NARS. The faculty members of the Academy are extensively trained across a range of areas covering agricultural research and education management, both in India and abroad. To improve the utility and credibility of training programmes, the Academy conducts research in the areas of agricultural research and education management. NAARM provides policy support in these areas to improve the efficiency and effectiveness of NARS. With the experience and expertise gained over the years, consultancy services are also provided by the Academy in its mandated areas.

The Academy is located at Rajendranagar in the neighbourhood of Acharya N.G. Ranga Agricultural University, NIRD, MANAGE. The Academy spread over 50 hectares area, has enviable sylvan environs. Over the years, the Academy with support from ICAR has been able to build up an excellent infrastructure, state-of-the-art video production laboratory, agricultural information unit and other facilities necessary for imparting training of highest quality. The Academy is endowed with an excellent Library and Information Centre, Conference Hall, Seminar Hall, Committee Room, Scientist Home, Halls of Residence, Computer lab, Offset Printing Press and Health Centre.

A striking feature of the Academy, apart from the infrastructure, is its quaint mixture of the new and old. It is this very spirit of the Academy, which is personified by the trainees and all those who work in the Academy, trying to uphold values of integrity, earnestness, commitment and idealism. It is perhaps this spirit of the Academy that each one carries out the Academy as he or she leaves its august portals to step into the National Agricultural Research System.

Mission

To enhance the performance of NARS by building capacity in research and education policy, planning and management, and to foster a scientific culture that can make the NARS highly productive globally.

Mandate

NAARM is charged to fulfill the following mandate:

- To organize and conduct training programmes in agricultural research management for the scientists at various levels
- To build up high quality resource material in agricultural research management based on actual field experience
- To undertake systematic review and study of management problems of agricultural research institutes, programmes and systems
- To plan, organize and conduct workshops and seminars in research management and educational technology
- To organize, liaise and coordinate programmes of international cooperation in the field of agricultural research management
- To assist the State Agricultural Universities in developing Regional Centres of Management to cater to the needs on human resource development

Objectives

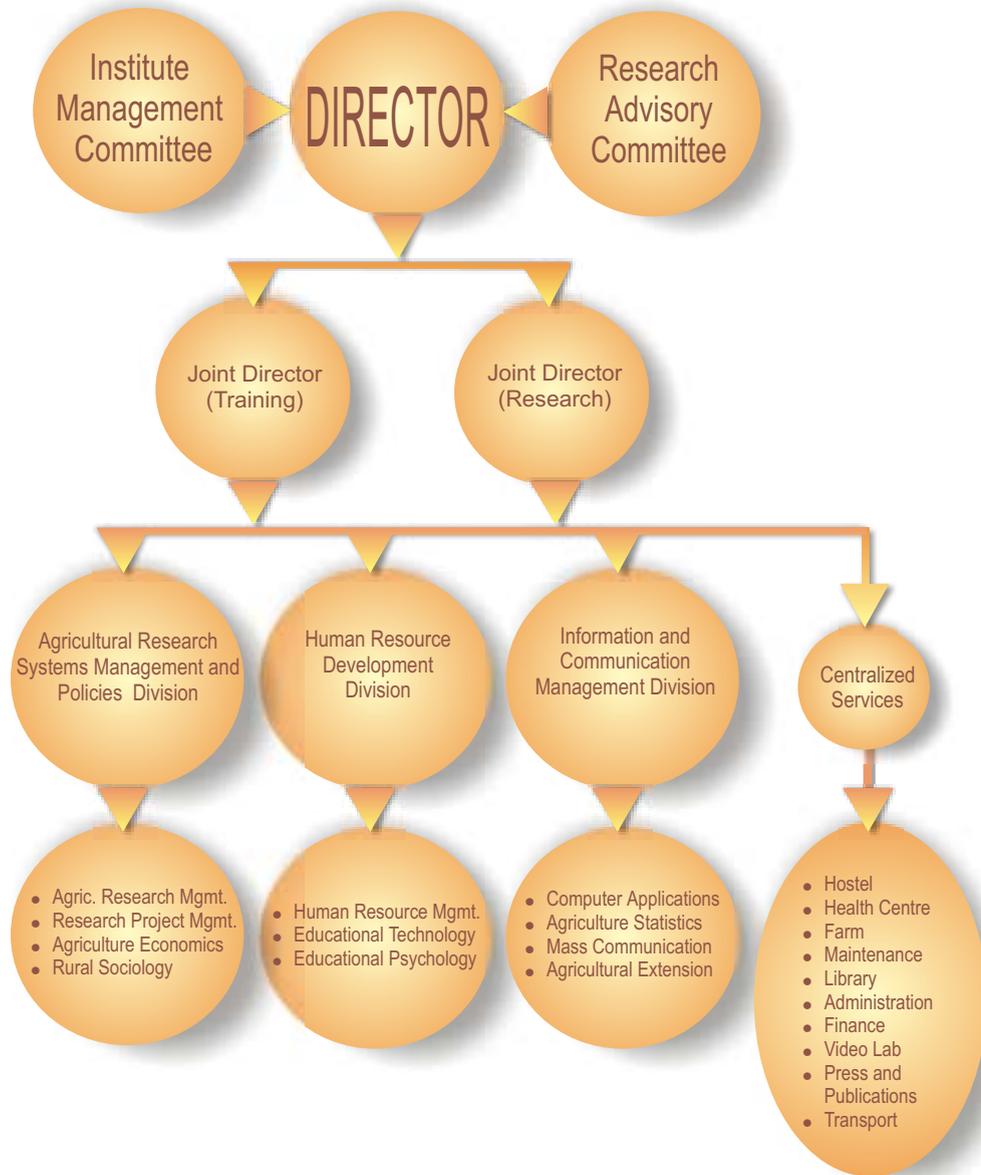
- To organize foundation courses for the scientists newly recruited into the Agricultural Research Service of ICAR
- To design and organize training programmes, workshops, and seminars, and to develop high quality material in agricultural research and education management for the senior and middle-level scientists of NARS
- To play a major role in different processes of human resource development of NARS, in the context of agricultural research and education
- To undertake policy-level studies on prioritization of research and resource allocation, and to enhance research productivity of the constituents of NARS and their programmes
- To evolve suitable management techniques for effective planning, scheduling, organizing, monitoring, and evaluation of agricultural research and development projects in NARS

- To study the management issues of various programmes and patterns of technology transfer, develop effective systems and strategies for effective communication of agricultural technologies
- To undertake development programmes for evolving more effective and efficient approaches, methods, and models in higher agricultural education for use in SAUs and Deemed Universities of ICAR
- To promote and execute academic programmes of higher learning in the specialized areas of agricultural research and education management
- To develop expertise in information technology to meet the application software needs of NARS
- To undertake systematic review and to develop appropriate systems for efficient and effective administrative and financial management in NARS
- To function as a repository of ideas and information in the form of databases in the field of agricultural research and education management, and to act as a clearing house for information dissemination through national and international networks in these areas
- To offer consultancy services in the field of agricultural research and education management, and agricultural information and communication technology.

Organization and Management

The Academy is headed by the Director. The Director is assisted by two Joint Directors (currently one Joint Director is in position) and three Division Heads in the execution and implementation of various programmes. The Academy is organized into three functional divisions, viz. Agricultural Research Systems Management and Policies, Human Resource Management, and Information and Communication Management. The Institute Management Committee (IMC) guides and supports the Director by periodic review of programmes and approval of investments in new areas of research and education, training programmes, workshops and seminars. The Research Advisory Committee (RAC) and Staff Research Council (SRC) provide broad guidelines and assist in developing and implementing specific research programmes and projects.

NAARM ORGANOGRAM



Human and Financial Resources

Human Resources (as on 31.03.2004)

Category	Sanctioned Strength	Posts Filled	Vacant Positions
1. Research Management Positions	03	01	02
2. Scientific	40	22	18
3. Technical	58	55	03
4. Administrative	45	44	01
5. Supporting	40	39	01
Total	186	161	25

Financial Resources (as on 31.03.2004)

The budget allocation and expenditure during 2003-04 are given in the following table. Information presented in the table below provides details on finances available from other sources and revenue generated during the period under report.

(Rs. in lakhs)

Scheme	Head	Budget Allocation	Expenditure
Non-plan	Establishment Charges	310.80	297.84
	Travelling Allowances	4.30	4.28
	Other Charges	217.90	217.90
	Works	—	—
	Sub-Total	533.00	520.02
Plan	Establishment Charges	40.00	27.54
	Travelling Allowances	14.00	12.35
	HRD	5.00	3.98
	Other Charges	95.00	95.00
	Works	100.00	59.86
	Sub-Total	254.00	198.73
Other Sources	AP Cess	11.05	8.88
	NATP	147.40	102.32
	Sub-Total	158.45	111.20
Grand Total		945.45	829.95

Income generation

(Rs. In lakhs)

S. No	Item	Amount
1	Training	46.49
2	Consultancy	3.60
3	Sale of Books, Technology, etc.	0.25
4	Sale of Agril. Produces	1.46
5	a) Room rent / License fee	7.60
	b) Interest on Loans & Advances	3.32
	c) Leave salary / Pension consultancy	1.26
	d) Miscellaneous Receipts	1.45
	Sub-total of a) to d)	13.63
	Sub-Total of 1 - 5	65.43
6	Interest on Short Term Deposits	6.66
7	Sale of Vehicles / Machinery	1.68
	Sub-Total of 6 - 7	8.34
	Total Receipts	73.77

NAARM Budget (2003-04) – Plan Expenditure

NAARM Budget (2003-04) – Non Plan Expenditure



Training Achievements



The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that every entry, no matter how small, should be recorded to ensure the integrity of the financial statements. This includes not only sales and purchases but also expenses, income, and any other financial activity. The document also highlights the need for regular reconciliation of accounts to identify any discrepancies early on.

Next, the document covers the process of budgeting and forecasting. It explains how a well-defined budget can help in controlling costs and maximizing profits. The importance of reviewing the budget regularly is stressed, as it allows for adjustments to be made in response to changing market conditions or internal needs. Forecasting is also discussed as a key tool for planning future operations and identifying potential risks.

The document then delves into the topic of financial reporting. It outlines the various types of reports that are typically generated, such as the balance sheet, income statement, and cash flow statement. It provides guidance on how to interpret these reports and what key indicators to look for. The importance of transparency and accuracy in reporting is also emphasized.

Finally, the document discusses the role of technology in modern accounting. It highlights how software solutions can streamline the accounting process, reduce errors, and provide real-time access to financial data. The document also touches on the importance of data security and the need for robust IT systems to protect sensitive financial information.

Training Achievements

Imparting training in the broad area of agricultural research and education management is the key activity performed by NAARM. The brief outline of the various programmes run at the Academy is as follows.

Foundation Courses: These programmes aim at improving the knowledge and skills of scientists and administrative staff at the entry level when they are inducted into the ICAR system. Programmes for the scientists focus on agricultural research management, whereas that for administrative and finance officers deal with administrative and finance management.

Senior-Level / Refresher Courses: For the benefit of the middle-level scientists and faculty members of ICAR and SAU systems, advanced programmes are conducted on various aspects related to agricultural research management, human resource management, and information and communication management. Some of these programmes are recognized by ICAR for the Career Advancement Scheme of scientists and faculty members.

Management Development Programmes (MDP): These are designed as per the managerial needs of the newly recruited Heads of Division, Project Co-ordinators and Zonal Co-ordinators.

Executive Development Programmes (EDP): Newly-recruited Directors, Assistant Directors General, Joint Directors of National Institutions, who comprise the Research Management Position cadre of ICAR, participate in these Executive Development Programmes.

Sponsored Programmes: These packaged programmes are designed as per the needs and requirements of clients from both India and other developing countries.

Off-campus programmes: At the request of research and educational institutions in NARS, tailor-made programmes are designed and offered by NAARM at the working place of scientists from these institutions.

Summer / Winter Schools: The Education Division of ICAR sponsors Summer / Winter Schools with a view to orienting the scientists and teachers on the recent advances in the field of agricultural research and education management.

International Programmes: The Academy is being looked upon by the developing countries to provide training support for their human resource development in the areas of agricultural research and education management. The Academy has developed expertise and excellent facilities to cater to these increased demands from the NARS of various developing countries.

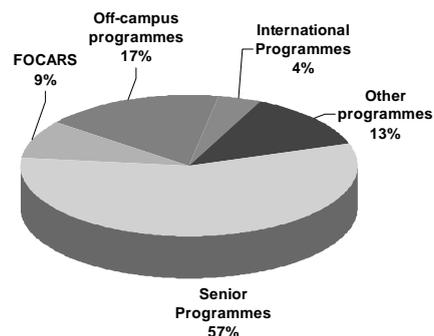
During the reported period, the Academy organized a total of 50 training programmes and trained 1354 personnel belonging to scientific, technical and administrative cadres of National Agricultural Research System in India and some other developing countries. The details are as follows:

Monthwise Training Programmes

Training Programme Details 2003-04

Programmes

Participants



A. Foundation Course for Agricultural Research Service (FOCARS)

The Foundation Course for Agricultural Research Service (FOCARS) was recast based on the 3rd QRT recommendations and also to take into account the changing global and national scenarios and challenges. It is of four months duration, organized and offered in three phases covering a total of 15 specific modules. After the first phase of training on Orientation and Capacity Building at NAARM, the Probationers underwent Field Experience Training (FET) of 33 days duration. In the first part of FET – known as Rural Field Experience Training, the Probationers were sent in multi-disciplinary groups of five to six persons each for a period of 15 days to Rural Agricultural Research Stations of NARS in different parts of the country. During this period in the rural areas, the Probationers carry out study of rural scenario through participatory techniques, interact with stakeholders of agriculture development like departments of agriculture, animal husbandry, horticulture,



fisheries, and allied departments like sericulture, forestry, etc., to study technology development and transfer processes. In the second part of FET – known as Urban Field Experience Training, they visited post harvest processing (cereals, milk, fruits and vegetables, meat, fish, etc.) and agro-based industries (starch mills, oil mills, etc.) located in and around

Hyderabad to gain insight into value addition, marketing operations and their role in rural development. The exposure gained through these interactions along with information obtained through PRA and group perceptions on multi-disciplinary research and development options in rural agriculture are utilized to generate the group report on rural perspective. The entire learning process in this period is based on experiential learning, teamwork, multi-disciplinary perception, holistic view of Indian farming and awareness through information and knowledge. One hundred and nineteen ARS probationers underwent foundation training in two batches (76th and 77th). Drs J. Challa and R.V.S. Rao coordinated the first programme and the second programme was coordinated by Drs K. M. Reddy and S. K. Nanda. (76th and 77th FOCARS April 14 to Aug. 16, 2003 and Oct. 28 to Feb. 24, 2004).

B. Refresher Courses

Information Technology in Agriculture

The application of information technology (IT) is becoming increasingly prominent in agricultural research and management. The advent of the Internet

has fundamentally altered the way in which work is carried out. Four programmes were organized to introduce emerging IT based agricultural



technologies so that they can be absorbed into routine agricultural research and technology transfer. Twenty-seven scientists attended these courses. The concepts covered were Trends in IT, MS Office, statistical software, scientific communication, E-mail, GIS, MIS, e-commerce, Internet and Networking. The first programme was coordinated by Drs

A. Gopalam and B. S. Sontakki and the second programme by Drs V.K.J. Rao and K. Vidyasagar Rao. (October 7 to 27, 2003 and March 3 to 23, 2004)

Agricultural Research Project Management

The programme was organized to equip the participants with knowledge and skills in various aspects of agricultural research project management. The topics covered were agricultural scenario, research project management, PRA techniques, information technology, scientific communication, and human resource management. Thirteen members attended the programme. The programme was coordinated by Drs K. M. Reddy and N. H. Rao. (December 3 to 23, 2003)

Human Resources Management

Agricultural research organizations of the country are receiving fairly adequate financial resources and have developed a formidable physical



infrastructure. However, there is a crisis of commitment, motivation and leadership. As a result of this, these organizations are not performing to their full potential, and there is a need to improve the management of people at work. Hence, this course was organized to overcome this lacuna in the Indian National Agricultural Research System (NARS). The course is aimed to sensitize agricultural professionals on these issues

and impart state of the art knowledge and skills for efficient human resource management. Sixteen scientists and faculty members from ICAR institutes and SAUs attended the programme. Drs M.M.Anwer, R.V.S.Rao and K.H. Rao, coordinated the programme. (January 21 to February 10, 2004).

C. Senior Programmes

Agricultural Research Prioritization Techniques

These programmes were organized with the objectives to familiarize the scientists with the various techniques used for prioritizing agricultural research projects and to share with them the practical experiences of priority setting at different levels. The content for this programme included need and importance of research prioritization, congruence method, domestic resource cost ratio method, checklist and scoring models, benefit–cost analysis, PRA tools, ICRA approach, decentralized research prioritization, SREP applications, etc. Fifty-two members attended these programmes. Drs B. S. Chandel and S. K. Soam were coordinators of this programme. (April 24 to 30 and August 21 to 27, 2003).

Improving Administrative Efficiency and Financial Management

The services offered by the administrative / accounts assist in collective planning and coordinating the management aspect which in turn help meeting the goals and improve productivity in research organizations. One of the



most critical problems faced by the organization is the development of general management talent capability for dealing with the demands of rapidly changing external and internal administrative environment. This course was organized to provide an over all exposure through cases and interacting with the senior professionals. Forty-six members attended the programme. Mr M. Suresh Kumar and Mr S.K. Pathak coordinated the programme. (June 17 to 24, 2003).

Statistical Software for Data Analysis

The programme was organized for the working scientists of NARS with an objective to provide adequate exposure on statistical softwares for data analysis. In this programme the softwares viz. MSTATC, SPSS, Microstat and Forecast Pro are included with adequate hands-on practice using the live data. Equal emphasis was also given on presentation and interpretation of the results. In addition to the above statistical softwares MS Excel and MS Powerpoint were also covered for graphical presentation of data. Twelve members attended the programme. Drs K. Vidyasagar Rao and M. Narayana Reddy coordinated the programme. (June 18 to 28, 2003).

Leadership and Personality Development

Scientists and teachers in the ICAR institutes, State Agricultural Universities, and other Agricultural Research Institutions have to perform



leadership roles in many of their activities. In order to be effective in executing these roles, they need to integrate the soft human elements with hard goal oriented actions. The programme was organized to explore the concept of

leadership and ways in which leadership has been exercised in modern times and to undertake leadership roles in a variety of groups in order to practice and develop leadership skills. Personality exploration, typing, development, leadership theories, Indian perspective, etc. were covered in this training programme. Drs M. M. Anwer and P. Manikandan were the coordinators. Six senior scientists attended the programme. (June 19 to 25, 2003).

Computer Applications in Agriculture

Application of computers in agricultural research and development has become more relevant and important to-day than ever before. Every scientist in the National Agricultural Research System needs to possess the knowledge and skill in working with computers. The Academy offers training programmes in computer applications in agriculture to achieve this goal. In this programme MS office modules viz. Word, Excel, Powerpoint and Access were covered. Besides these modules topics like GIS and computer networks were also covered. Drs K.M. Reddy and K. Vidyasagar Rao coordinated this programme. Nine participants attended this course. (July 21 to 31, 2003).

Stress Management for Scientists

Stress management is gaining more and more importance now-a-days, particularly in the organizational context. Scientific job is not a stress-free job. Scientists, on their work are exposed to tension, frustration and anxiety while executing their assigned duties. This programme gives an insight to the participants about the role of stress and coping mechanisms. It contains several instruments, exercises and case studies to measure the role-related stress of the individual scientists and also facilitates them to develop appropriate coping mechanisms and strategies. Drs P. Manikandan, K. H. Rao, and R. V. S. Rao, in which eight participants took part, coordinated this programme. (August 1 to 7, 2003).

Advances in Videography and Photography

Photography and videography find applications in agricultural research, education and extension. Techniques like macro and microphotography, calling for special skills, are applied in agricultural research. Editing of video on computers has become the norm now-a-days because of the advantage of introducing special effects easily. With the advent of digital technologies in

video and photography, special skills in these relatively new fields have to be developed. This programme was organized to develop modern skills in videography and photography and expose the participants to the technical and creative aspects of these technologies. Mr K. R. Prabhakar and Dr N. Sandhya Shenoy coordinated the programme. (August 26 to September 5, 2003).

MDP for RMP's

The programme was planned and organized to provide a forum for the RMPs in the system to interact on various issues related to agricultural research management. The broad themes covered during the programme include research project management, human resource management, information and communication management, and institution management. Twelve members attended the programme. Drs. P. Manikandan, M. M. Anwer and Jagannadham Challa coordinated the programme. (September 19 to 25, 2003).

Computer Applications for Administrative and Financial Management

Today computers are used extensively in many areas including administrative and financial activities and, thereby, playing an important role in human resource development for effective and efficient office functioning. Considering these facts this programme was organized to orient and sensitize personnel of administrative / financial wings of NARS in computer applications. The topics covered in this programme were basics of computers, word processing, spreadsheets, office automation, e-administration, and the finance software viz. ARFIS. Dr K. M. Reddy, Mr S.K. Pathak, and Mr M. Suresh Kumar coordinated this programme. Thirty-one participants attended this training programme. (September 16 to 23, 2003).

Protection of Intellectual Property under the WTA

The programme was first of its kind in the Academy. The objective was to bring the allied agreements at international level to understand the implications in agricultural research. The course focused on TRIPS agreement with the types of IPs available and India's compliance to TRIPS obligations.

IPR management at ICAR level, CSIR systems with relevant cases was discussed. IP protection in IT, patent search were other topics covered. The course also focused on Biodiversity, Protection of Plant Variety and Farmer's Right (PPVFR) Act, and Patent Cooperation Treaty (PCT). Drs R Kalpana Sastry and N. H. Rao coordinated this programme. Thirty-two members attended the programme. (October 14 to 17, 2003).



Internet based Information Systems in Agriculture

New information technology has the potential to improve the quality of agricultural research, the efficiency of management, and the relevance and timeliness of research results. Scientists and managers can now access more information in a given time and they can disseminate information to users more easily than ever before. Information systems like Management Information System (MIS), Decision Support Systems (DSS), expert systems, Knowledge systems, Spatial Decision Support Systems (SDSS), have evolved as efficient computer based information management systems. Currently, the success of information technology applications greatly depends on the type of information systems an institute/organization has developed. Hence, the programme was organized to build the capacity of NARS scientists to optimizing the use of available Internet and computer software facilities to produce creative scientific output. Six senior scientists attended the programme. Drs M. Narayana Reddy and N.H. Rao coordinated the programme. (November 11 to 20, 2003).

Management Development Programme in Agricultural Research

Management Development Programme was held in response to the felt need for organizing course in research management for the newly recruited heads of the divisions and project coordinators of ICAR institutes and headquarters. Drs Jagannadham Challa and R.V.S. Rao coordinated the MDP programme covering concepts like research management, HRD, administration and financial management, information and communication technology, where nine participants took part. (November 13 to 19, 2003).

Web based Education and Training

New information technology has the potential to improve the quality of agricultural research, the efficiency of management, and the relevance and timeliness of research results. Currently, the success of information technology applications greatly depends on the type of information systems an institute/organization has developed. The web is a potential tool to bring second green revolution in the country. Hence, the programme was organized with NATP sponsorship with an objective to develop net-based education and training modules using commonly available web design softwares and for effective utilization of Internet for dissemination of agricultural technologies to users. Fourteen members attended the programme. Drs D. Rama Rao and M. Narayana Reddy coordinated the programme. (December 2 to 11, 2003).

Faculty Development Programme in Educational Technology

The programme was organized to develop need-based knowledge, skills and competencies among teachers for agricultural education and to

systematically apply the principles of instructional design and development of the planning and preparation of teaching aids. The programme focused on Educational technologies and their application; Innovative and modern learning approaches and process; Courseware development and design and Personality development. Eighteen Assistant Professors and Associate Professors involved in UG and PG teaching in SAUs and ICAR deemed-to-be universities participated in the programme. Drs Jagannadham Challa and M. Narayana Reddy coordinated the programme. (December 3 to 23, 2003).

Impact Assessment of Agricultural Research and Development

Impact assessment is an integrated approach, and techniques are required to incorporate the viewpoints of clientele, policy makers, researchers and donors to address them towards the societal goals. Otherwise conflict remains in priority setting, resource allocation, and accountability. Public and private support to research will depend largely on efficiency issues and ability to reckon with multiple objectives, ranging from food security to sustainability, poverty alleviation, gender issues, export, etc. The impact assessment of agricultural R & D projects is difficult since it has multiple outcomes and it is also difficult to decide which outcome to evaluate. Hence, the programme was organized to provide an overview and description of the major methodologies involved in impact assessment in different areas of agricultural research and development. Twelve members attended the programme. Drs G.P. Reddy and V. K. J. Rao coordinated the programme. (December 4 to 10, 2003).

Farming Systems Approach for Sustainable Agriculture Development

Agricultural research institutions in the country have limited experience of implementing the Farming Systems Research (FSR) strategy in its entirety. Despite the wide appreciations, the approach has been very slow to be put into practice. Inadequate knowledge and experience of the scientists is one of the major hurdles in implementing the FSR strategy. Hence, the programme was organized to enable the participants to understand problem-solving approach in the generation and diffusion of technologies appropriate to farmers' situation and to acquaint them with methodologies that ensure 'system oriented' agricultural research. Eleven members attended the programme. Drs T Balaguru, S.K. Soam and S. K. Nanda coordinated the programme. (December 15 to 24, 2003).

GIS Applications in Agriculture

GIS has proved to be versatile tool in recent years in dealing with spatial data for realistic understanding and efficient management of agricultural processes. The applications of GIS in agricultural research, management and extension are growing. Several institutions of NARS have recognized

the importance of GIS and have invested or proposed to invest in establishing GIS facilities. There is a growing need to build the capacity of NARS in making effective use of GIS based technologies in agricultural research and management. Hence, the programme was organized to introduce the relevant definitions and concepts of GIS and related technologies like remote sensing and to create an understanding of the present and possible future applications of GIS in agricultural research and management. Thirteen members attended the programme. Drs M. Narayana Reddy and N. H. Rao coordinated the programme. (December 15 to 24, 2003).

Gahan Prashikshan Va Karyashala

Two programmes were organized for the employees of ICAR headquarters and ICAR institutes, who are working in the sections other than Hindi. The major objectives of the programme were to discuss about the experiential usage of Hindi. More importance was given on practical exercises in order to enable the participants to learn the use of Hindi in discharging their duties in Hindi. One hundred and thirty eight scientists, technical, administrative officials specially who are not directly connected to Hindi section but interested in official language implementation policy participated in two programmes. Dr A. Gopalam and Mr Pradeep Singh coordinated the first programme whereas Ms J. Renuka and Dr A. Gopalam coordinated the second programme. (July 1 to 5, 2003 and Jan. 27-31, 2004).

Computer Training to ASRB Staff

The programme was exclusively designed for ASRB staff members to provide exposure and adequate hands-on experience to the participants on the basics and applications of computers. The programme dealt with concepts of windows, word processing, spreadsheets, presentation techniques, statistical analysis, networks, and multimedia. Four members attended the programme. Dr M. N. Reddy coordinated the programme. (Feb. 9 to 12, 2004).

D. Summer Schools/ Short Courses (sponsored by the ICAR) & Other Sponsored Programmes

Summer School on Recent Advances in Agricultural Research Project Management

In the light of increased institutional activities coupled with growing scarcity of resources, researchers are faced with the problem of efficient and effective management of their research projects. Their research agenda should be in tune with the aspirations and circumstances of their stakeholders, and their research efforts should lead to productivity gains in a sustained manner. This calls for specialized skills to be acquired by the researchers. Hence, this programme was organized to equip them with

necessary tools and techniques towards better project management. This programme focused on Agricultural Scenario, Sustainable agriculture, Technological forecasting, Research management process, Project management cycle, MS Project – a Tool for project management, Research



– extension linkages, Multidisciplinary team building, Conflict management, Scientific communication, Labour management, Economic liberalization and globalization of agriculture, Administrative and finance management. Twenty one members attended the programme. Dr T. Balaguru was the Director of Summer School and Drs N. H. Rao, R. Kalpana Sastry, S. K. Soam, and S. K.

Nanda coordinated the programme. (April 9 to 29, 2003).

Short Course on Management Development Programme for Women Scientists

Women have often fared better in professional and financial services, as well as the public service, compared to other sectors. With the rise in the qualified women work force in India, there has been significant change in the agriculture sector where increasing number of professional women are now holding key managerial positions in research, education and extension over



the past decade and many more are in the pipeline. Keeping in view that the personality and leadership development of women scientists holds the key for better organizational effectiveness, this course was organized to cater to the needs of developing women scientists. The course covered in three modules viz. 1. Agricultural research environment: emerging issues, 2. Managing projects, and 3. Interpersonal relationships. Twenty-four members attended the

programme. Dr R. Kalpana Sastry was the Course Director and Drs N. S. Shenoy, P. Manikandan, D. Rama Rao, and A. Gopalam were the other coordinators of the course. (May 27 to June 6, 2003).

Summer School on Optimizing Learning Teaching by the Development of Multimedia Courseware for the faculty of SAU's



With the onset of new advances in Instructional Technology the support resources created by Multimedia is gaining ground and requires to be developed in university . This was the aim of the above Summer School. The content of the programme was focused on instructional aids using video and computer mediated materials besides already known instructional aids. The participants developed one

instructional aid of each category and took back with them for further multiplication and use in their own work area. Twenty-five members attended the programme. Dr A. Gopalam was the Summer School Director, whereas Drs. R. Kalpana Sastry, N. Sandhya Shenoy, D Rama Rao, P. Manikandan coordinated the programme. (June 6 to 26, 2003).

Research Management Training for Scientists from Central Silk Board



The programme was organized to develop in the researchers future perspective of Indian agriculture, in response to changing global agricultural scenario and sensitize the participants to the emerging issues of research management and developing their capacity to contribute more effectively to sericulture development through their research. Twenty-five members attended the programme. Dr S.N. Saha coordinated the programme. (June 26 to July 2, 2003).

Research and Extension Management for Scientists of Central Silk Board

The programme was organized to sensitize the participants to the emerging issues of research and extension management and developing their capacity to contribute more effectively to sericulture development through their research and extension endeavours. Twenty-five scientists from Central Silk Board participated in the programme. Central Silk Board, Bangalore, sponsored this programme. Drs R. V. S. Rao, and B. S. Sontakki coordinated the programme. (Feb. 24 to Mar.1, 2004).

E. Executive Development Programme

Executive Development Programme in Agricultural Research Management

One programme was organized to provide a forum for the Directors of the ICAR institutes to discuss various research management issues confronting the effective functioning of the ICAR institutes. It gave an opportunity to the participating Directors to share their experiences based on individual case and specific situations. In addition, it exposed the participants to a few practical tools for solving research management problems. This programme was organized for the five Directors of ICAR Institutes and discussions took place on institute management, general administration, and HRD issues. Drs Jagannadham Challa and S.N. Saha coordinated this programme. (July 18 to 22, 2003).

F. Off-campus Programmes

Educational Methodology and Instructional Technology (EMIT)

Three Training programmes were organized at the Veterinary College, Udgir; Marathwada State Agricultural University Parbhani, and Bombay Veterinary College, Mumbai. These programme were intended to provide conceptual understanding of EMIT philosophies for improving the quality of agricultural education and to provide an over view of Learning Teaching Testing and Evaluation by hands on experience. Seventy-seven senior scientists attended the programme. Drs A. Gopalam, K.H. Rao and Mr M. Suresh Kumar coordinated these programmes. (April 19 to 25, 2003; June 24 to 30, 2003, and January 19 to 24, 2004).

Orientation Training Programme for Administrative and Financial Accounts Staff

The programme was specially and exclusively designed for the functionaries of administration and finance wings of Marathwada Agricultural University, Parbhani to achieve total quality. Various dimensions related to agricultural education, economic reforms, personnel and financial management, personality development and other general administrative and financial issues formed the curriculum of this programme. Thirty-two members attended the programme. Mr M. Suresh Kumar and Dr A. Gopalam coordinated the programme. (July 7 to 11, 2003).

Agricultural Research Project Management

The programme was exclusively designed for the faculty members of CAU, Imphal to equip them with knowledge and skills in various aspects of agricultural research project management. The topics covered were agricultural scenario, information technology, scientific communication, and human resource management. Dr T. Balaguru coordinated the programme. (March 1 to 6, 2004).

G. International Programmes

Administration and Finance Management

As a part of the international agreement with Sri Lanka this programme was organized, to provide overview of ICAR system and administrative and financial support given to research priorities to administrative and financial officers of Sri Lanka. Two members attended the programme. Mr M. Suresh Kumar, and Mr S.K. Pathak, coordinated the programme. (Oct. 27 to Nov. 7, 2003).



Agricultural Research Management

As a part of the international agreement with Sri Lanka, two Programmes were organized for scientists of Sri Lanka Council for Agricultural Research Policy (CARP). These programmes focused on various facets of



agricultural research management, and provided a forum for sharing research management experiences of Indian and Sri Lankan systems for mutual benefit. Twenty six scientists comprising Directors, Additional Directors, Deputy Directors, and Senior Research Officers of Department of Agriculture from Sri Lanka

participated in these programmes. Drs T. Balaguru and N.H. Rao coordinated the first programme and the second one was coordinated by Drs T. Balaguru and S.N. Saha. (Nov. 11 to 30, 2003 and Jan. 30 to Feb. 21, 2004).

FAO training workshop on Electronic Production of Agricultural Documents and Bibliographic Database Management

The programme was organized in collaboration with the Food and Agriculture Organization (FAO) of the United Nations. The objective of the workshop was to train facilitators/trainers of agricultural information units from SAARC countries in the creation, management, and publication of documents in electronic format, and in the use of methodologies and tools



for full-text bibliographic database management, considering newly developed web technologies. The workshop covered electronic document production and management, following international standards and methods from FAO's World Agricultural Information Centre (WAICENT); and

development and processing of metadata for printed and electronic materials, including but not limited to using the recently developed WebISIS application to capture, manage, and disseminate information. Twenty-eight delegates from Bangladesh, Sri Lanka, Nepal, and India participated in the workshop. Mr Michael Riggs, Ms Anne Aubert, and Ms Gauri Salokhe from FAO, Rome, and Ms Bautista Janice Quemado from IRRI, Philippines, were the resource persons. Dr D. Rama Rao coordinated the workshop. (Jan. 15 to 24, 2004).

Workshops, Conferences, Meetings, etc.

Workshop on Gender Perspectives

As a part of the research scheme on developing instructional resource modules for the course on Gender in Agriculture at undergraduate level this workshop was organized from April 8 to 12, 2004. The aim of the workshop was to discuss the curriculum design and development process in light of integration of gender related issues and also describe the development of instructional modules for integration of the resource materials; and also to demonstrate the developed resource material in CD which have been converted to CAI materials; and to provide a hands on for assessing their efficacy for different category of learners and seek comments from the experts on its use and integration in the U.G. curriculum in order to sensitize the importance of Gender related issues

The topics covered in the workshop include trends in development and gender impact as related to historical development of agriculture in India in pre and post independence periods due to political and social change; Historical trends of gender roles in agriculture in pre modern societies impact of green revolution initiatives for gender equity, feminization of agriculture and role clarity in agriculture; Factors determining gender roles more specifically in agrarian system ownership and tendency family patterns; Agro ecological region and farming system initiatives specifying gender equity; Loss conceptualization in terms of production and productivity and bio diversity; Social and cultural loss due to subordination of women in family. Eighteen members attended the programme. Dr A. Gopalam coordinated the workshop.

Export Potential of Dairy Products

Over the past four decades, milk production in the country has shown a promising and steady growth, reaching a level of 84 MT and becoming the highest producer of milk in the world. India also produces milk at globally competitive prices with excellent export potential. Having attained self-sufficiency in grain production there is a need to plan for strategic diversification of Indian Agriculture in Livestock Production System, i.e. the Dairy Sector. In this context, the Academy in



collaboration with National Academy of Agricultural Sciences (NAAS), New Delhi organized a two-day policy planning brainstorming session on Export Potential of Dairy Products on August 22 and 23, 2003.

Dr B.N. Mathur, Director, NAARM and Convener of the programme welcomed the delegates. Dr K. Pradhan, Former Vice Chancellor, Orissa University of Agriculture and Technology, Bhubaneswar and former Secretary, NAAS presented overall picture of export scenario and projections of dairy products. Dr V.L. Chopra, President, NAAS delivered presidential address on the occasion.

Mr Aanimesh Banerjee, President, Indian Dairy Association, New Delhi, Ms Shashi Sareen, Director, Export Inspection Council of India, New Delhi, Dr R.T.Ravi, Managing Director, M/s Kreb's Biochemicals Ltd, Hyderabad Dr N.N. Varshney, NDDB, Anand, Dr N. Balaraman, NDRI, Karnal, Mr Vijay Sardana, Executive Director, CITA, New Delhi made brief presentations preceding the brainstorming sessions under four different themes viz. 1. Export of Dairy Products under WTO Regime – Prospects and Strategies. 2. Economic and Policy Considerations for Infrastructure Development and International Marketing. 3. R & D Product Diversification and HRD in Promoting Export of Dairy Products, and 4. Quality Management for Global Market.

Thirty delegates representing the academic, R&D, finance, marketing institutions and dairy and food industries participated in the programme. Dr K.M. Reddy and Dr K.H. Rao coordinated the programme. The following recommendations emerged:

- ▶ Enactment of a Central bill "Prevention of Infectious and Contagious diseases in Animals".
- ▶ Enforcement of stringent quality considerations – for improving the quality and shelf life of Indian dairy products.
- ▶ Incentive for clean milk production.
- ▶ Mandatory HACCP for all export oriented units.
- ▶ Encourage self-regulation by the industry at all levels.
- ▶ Subsidy for technological upgradation in milk production-cum-enhancement and product development (indigenous milk products) – Promote the traditional Indian milk products in the global market through awareness, publicity, nutritional value appraisal and festivals.
- ▶ Since India produces the largest quantity of buffalo milk in the world there is need for popularizing buffalo milk and its products by apprising on the nutritional value and to popularize traditional dairy products in South East Asia, Africa, China and other neighbouring countries to create niche for Indian dairy products.

- ▶ Support women groups networking for regional milk collection centers by spreading the model of Amul to many places in India.
- ▶ Introduce attractive packaging, labeling and other required standards to compete globally.
- ▶ As a strategy, the mass media channel such as TV may be used for creating interest in Indian products through dairy meals and food festivals abroad.
- ▶ As an awareness strategy, it is desirable to create a permanent department or unit in the existing infrastructure of national research centers whose mandate is to continuously monitor trade developments and update the appropriate web site for mass information.
- ▶ Setting up of high powered monitoring and steering committee to deal with national and global policy issues.

Management Workshop on Transience in Organizations

Recognizing the need for sensitizing the Directors of ICAR Institutes towards management skills for effecting changes as well as to develop an action plan for leaping boldly forward in turbulent world, the Academy organized a workshop from October 27 to 30, 2003. This workshop was designed to provide resource input as well as capture the experience of the participants to galvanize a road map for implementation of process of change. The

workshop also provided a platform for the participating Directors to interact with one another and share their experiences and insight for managing transience in their respective institutions.



Dr K. Pratap Reddy, Director, IRMA, Anand and Prof. Dharni P. Sinha, Chairman and MD, COSMODE, Hyderabad were the Chief Guests in the inaugural and valedictory sessions respectively.

Directors preferred a better reporting and communication strategy between ICAR headquarters and institutes. NAARM would take up monitoring and evaluation of implementation of change agenda by the different institutions. Nineteen Directors of different ICAR institutes participated in the workshop. Drs M.M. Anwer, R.V.S.Rao and B.S. Sontakki coordinated the workshop.

Workshop on Agricultural Heritage of India

A two-day workshop on Agricultural Heritage of India was organized on December 1 and 2, 2003 for the orientation of State Agricultural University faculty members to teach "Agricultural Heritage of India" course to undergraduate students. The workshop was sponsored by the Education Division of ICAR, New Delhi and Asian Agri-History Foundation (AAHF), Hyderabad. Technical input for the workshop was provided by Dr Y.L. Nene, Former DDG, ICRISAT, who is presently Chairman of AAHF. The workshop deliberated on need for students' exposure to agri-heritage, subject matter, and sources of literature for agri-heritage course. Consensus was evolved to include two credit courses in the second year of the undergraduate programme.

Fifty-six delegates from ICAR and 18 from State Agricultural Universities participated in the workshop. Drs P. Manikandan and R. Kalpana Sastry coordinated the workshop.

Workshop on Production of Video Films for ICAR Officials

The programme was organized to acquaint participants about the codal formalities in undertaking video production under NATP funding for the Satellite Agricultural Channel (Krishi Channel) proposed to be started by ICAR. The procedure for selecting the production agencies, awarding the contract, shooting and editing of video programmes and preparation of final copies to suit to the needs of telecast etc. Twenty-four officials who are associated with video production from different ICAR institutes participated in the workshop. Mr K. R. Prabhakar coordinated the workshop. (Dec. 26 to 27, 2003).

National Workshop on Methodologies for Prioritization of Fisheries Research

A two-day National Workshop on Methodologies for Prioritization of Fisheries Research in India was organized on November 10 and 11, 2003 to develop strategic research directions for different fisheries production systems and to discuss methodologies for prioritization of fisheries research. Dr S. Ayyappan, Deputy Director General (Fisheries), ICAR, New Delhi inaugurated the workshop and delivered the keynote address.

The workshop was organized into five technical sessions viz. - i) Methodological framework for research prioritization, ii) Research priorities in Marine Fisheries, iii) Research priorities in Brackish water Aquaculture, iv) Research prioritization in Fresh water Aquaculture, and v) Methodologies for

prioritization of production constraints. The workshop recommended congruence, checklist and scoring method, yield loss and RBQ methods the most suited approaches at macro, meso and micro levels of the fisheries sector.

Fifty-nine delegates from ICAR fisheries institutes, fisheries colleges, and state departments of fisheries participated in the workshop. Drs G.P. Reddy and B.S. Sontakki were the coordinators of the workshop.

SRC Meeting

The Staff Research Council (SRC) meeting was held on July 23, 2003. The meeting was organized to review the achievements of completed projects and progress made by the on-going projects undertaken by the faculty members, as well as to approve the new project proposals prepared by faculty members. Research activities at the Academy needs to be planned keeping in view the vision, mission and mandate of NAARM said Dr B.N. Mathur, Chairman, SRC while addressing the members at the meeting. It was proposed to take up the training needs assessment of scientists in the NARS.

RAC Meeting

The Research Advisory Committee (RAC) meeting was held on August 5, 2003. Dr B.N. Mathur, made a brief presentation about NAARM covering various aspects of its organization and functions. Dr H.K. Jain, Chairman, RAC emphasized that NAARM should act as the guiding force to ICAR in policy decisions. On the lines of recent initiatives taken up by ICAR to improve the effectiveness of RAC in its institutes, the RAC of NAARM should be made more effective by including one or two of its members in the Academy's SRC and IMC so that continuity is maintained in all its endeavour. Some of the recommendations, which emerged from the deliberations in the RAC meeting, are as follows:

- Adequate flexibility should be ensured in the mandate of NAARM to address the emerging challenges on account of the economic liberalization and globalization of agriculture enunciated by the government.
- Being the flagship programme of NAARM, duration of the Foundation Course for Agricultural Research Service (FOCARS) should be increased to one year as in other all India services and the curriculum should include provision for the placement of young scientists to work with experts in premier R & D laboratories within and outside the NARS.

- In order to ensure the relevance of training organized by NAARM, it is important for the faculty members to undertake studies to assess the impact of their training the performance of scientists in the work place. In such impact analysis, critical factors for the success and failure should be included.
- Modern biotechnology can play a vital role in improving agricultural productivity in the country. By focusing on issues like risk, bio-safety, etc. NAARM should develop specific modules and organizing training, jointly with institutions like DBT and Gene Campaign, in the management of products developed through biotechnology.
- For improving the visibility collaborative programmes with premier management institutions within the country and abroad need further strengthening through joint research and training activities. Opportunities available for such collaboration with institutions like the Asian Institute of Technology (AIT), Institute of Public Enterprises (IPE) should be fully exploited by NAARM.

Dr J.C. Katyal, DDG (Education), ICAR, New Delhi; Dr Suman Sahai, Gene Campaign, New Delhi; Dr K. Harigopal, Director, IPE, Hyderabad; Dr R.K. Samanta, Joint Director, NAARM; Dr P. Manikandan, Head, HRD Division, NAARM; Dr D. Rama Rao, Head, ICM Division, NAARM; Dr T. Balaguru, Head, ARSPM Division and Member Secretary, RAC attended the meeting.

Discussion Meeting on Performance Assessment of Agricultural Research Organizations

In the light of globalization of agriculture coupled with increasingly scarce research resources at their disposal, the research organizations in the National Agricultural Research System (NARS) are hard pressed to improve their performance and be accountable to a variety of stakeholders and beneficiaries. Like in private sector, the public sector research organizations are called upon to show results in the form of improved technologies that are acceptable to the end users with a given set of research resources.

In this context, the Academy is entrusted with the task of developing a more realistic methodology for assessing the performance of agricultural research organizations under the World Bank supported National Agricultural Technology Project (NATP). Through intensive interaction with senior level functionaries in the NARS as well as with international experts, a basic methodological framework for assessing the performance of agricultural research organizations was developed by NAARM. The developed methodology was field tested, on a pilot scale, in a few selected research

institutions in the ICAR and Agricultural Universities in the country with regard to their applicability and utility for self-assessment of their performance. The workshop was organized on March 20, 2004 to critically examine the project findings based on selected case studies so as to finalize the methodology. Following are some of the suggestions from the Discussion meeting.

1. Utility of the methodology: All the members have agreed that the methodology was useful for the purpose of self-evaluation and introspection of the performance of agricultural research organizations.
2. Further refinement: It was suggested that instead of taking the total man months of all the researchers for calculating the ratios, the man months of those researchers who have participated in the development of a given product/technology/management practice etc. should be taken into the consideration. However, it was informed that the present methodology should be used to begin with for large-scale adoption of the methodology and improvements can be done later based on need.
3. It was also decided that in the output category use of variety for estimating the ratio should be done with caution as it may create problems in years when varieties are not released.

It was also agreed that the present methodology was for self-introspection of the performance, and it can also be used to complement the work of the outside assessment bodies like QRT etc.

Twenty-two senior functionaries, including Directors of ICAR institutes and Vice-Chancellors of State Agricultural Universities, took part in the deliberations. Drs T. Balaguru, Head ARSPM division, R. Kalpana Sastry and R.V.S. Rao, Senior Scientists coordinated the workshop.

Meeting on Evaluation of Research for Parliamentary Standing Committee

A meeting on Constitution of a Committee to evaluate the worth of the research work carried out by the Institutes of DARE / ICAR was organized on March 26, 2004, with Directors of ICAR institutes in Hyderabad and Bangalore and Senior Officers of Acharya N.G. Ranga Agricultural University, Hyderabad. The meeting was chaired by Dr I.V. Subba Rao, member of the committee. It was organized to suggest a framework to evaluate research output and its use to Indian agriculture. The research impact may be of direct or indirect use to end users and economic benefit to be worked out.

The research system needs to project its achievements in general economic terms so as to influence policy body on enhanced support to agricultural research. Dr D. Rama Rao, Head, ICM Unit coordinated the meeting.

Meeting on Development of Quantitative Criteria for Selection of Research Management Positions

A meeting on Quantitative criteria for the selection of candidates for the scientific and research management positions of ICAR through ASRB was organized at NAARM on February 3, 2004. Dr S.A.H. Abidi, Member, ASRB, New Delhi sought the academy's association in developing an objective criteria for the application form for different research management positions and uniformity in the desirable and essential qualifications. It is opined that the nature of work and the mandate of different institutions are not the same and therefore, the quantitative criteria to be developed should take care of these differences.

Management Committee Meeting

XXXVII Meeting of NAARM Management Committee was held at the Academy on May 27, 2003. The committee perused the training programmes organized during the period from January to May 2003. Further, the committee discussed the need to promote working linkages between the ICAR/Academy



with industry and trade organizations for the development and strengthening of agribusiness in our country. Dr B.N. Mathur, Director, NAARM; Dr J.C. Katyal, Deputy Director General (Education), ICAR, New Delhi; Dr I.V. Subba Rao, Vice Chanceallor, ANGRAU, Hyderabad; Dr Mruthyunjaya, Director, NCAP, New Delhi; Dr B. Mishra, Project Director, DRR, Hyderabad; Dr Raghubansh Prasad Singh, Fatuha Post, Patna District, Bihar; Dr R.K. Samanta, Joint Director, NAARM; Dr T.

Balaguru, Head, ARSPM Division, NAARM; Dr P. Manikandan, Head, HRD Division, NAARM; Dr D. Rama Rao, Head, ICM Division, NAARM; and Mr M. Suresh Kumar, Chief Administrative Officer, NAARM attended the meeting.

NAARM Foundation Day Celebrations

Marking the 27 years of its foundation, the Academy organized Foundation day lecture on September 1, 2003 by Dr (Mrs) Kamala Krishnaswamy, Former Director, National Institute of Nutrition, Hyderabad. Speaking on the occasion Dr Kamala Krishnaswamy said that agriculture

and nutrition are the two faces of the same coin. Though India has made good progress in certain spheres of science and technology, it is listed amongst the least developed countries because of its slow pace in social development in terms of nutrition, health, literacy etc. leading to low Human Development Index. Nutrition status of the children is the most sensitive index of the nutrition status of the community, because malnourished children grow up to malnourished adults. Critical determinants of malnutrition are population explosion, poverty, poor public health and pathetic literacy, unemployment and inequitable distribution. Green revolution to ever green revolution, renewable energy technology, geographic information system mapping, management and marketing technology, food safety issues like food additives, contaminants, mycotoxins play a vital role. Nutrition problem and future needs require literacy drive, empowerment, support system, community participation, human resource, research, management, collaborations, technology transfer, partnerships and networking. She suggested that it is imperative to have policies, programmes and personnel to involve people and public health to eradicate poverty and malnutrition. She stressed that there is an urgent need to shift from national food security to household food security and nutritional security. To counter malnutrition it is important that availability and accessibility of food at affordable prices is absorbed into the nation.

Earlier Dr B.N. Mathur, Director, NAARM welcomed the gathering and gave a bird's eye view of progress of the Academy over the last two and half decades. He stressed the need to evolve a well structured HRD plan for competence building at the national and international level for all of the functionaries of NAARM, introduction of phased plan for the e-Governance of NAARM and R& D initiatives for developing 'contextual case studies' for strengthening management development programmes for national agricultural research service. He also said that professional skills to be acquired to expertise in global perspective on agricultural policies of various countries for policy planning towards imparting competitiveness to Indian agriculture and capabilities for introducing professional management for modernizing Indian agriculture.

Hindi Awareness Celebrations

The Academy organized 'Hindi Awareness Celebrations' from September 15 to October 14, 2003, with a view to bring about an awareness about the official language and to create an environment congenial for the use of Hindi for official purposes among the staff and officers of the Academy. During this period various competitions viz. noting and drafting, essay writing,



debate, translation of words, elocution, and dictation in Hindi etc. were held in which officers/staff of the Academy participated enthusiastically in large number. Dr A. Gopalam, Officer-in-Charge (Hindi) presented a report on the achievements of Hindi Unit during the year 2003. Dr B.N. Mathur, Director, NAARM and Chairman of the Official Language Implementation Committee of the Academy distributed the prizes to the winners of various competitions. Dr Mathur congratulated all the officers/staff for participating in the competitions, and hoped that in future also officials would participate in large number with the same enthusiasm.

National Science Day Celebrations



Knowledge and information are essential for farmers to respond successfully to social, economic, and technological opportunities, especially those that help improve agricultural productivity, food security, nutrition, and rural livelihood, said Prof. E. A. Siddiq, Former National Professor and Ex-Deputy Director General (Crops), Indian Council of Agricultural Research (ICAR), New Delhi, while addressing the faculty, staff, and trainee scientists, on the occasion of National Science Day Celebrations, organized at the Academy on February 28, 2004.

Dr Siddiq pointed out that technology development must be demand driven, i.e. it must be based on the socio-economic and environmental needs and circumstances of resource-poor farmers. The science that made the green revolution happen is still relevant today and will continue to play a crucial role in the future, along with advances in biotechnology, he said. We cannot achieve food security without improving agricultural productivity and sustainability in small-scale sector. To achieve this, we need to empower these farmers with appropriate technology, he added. The programme was planned and facilitated by Dr M.M. Anwer, Principal Scientist, and Dr R. Kalpana Sastry, Senior Scientist, NAARM.

Feedback

One of the salient features of the programmes organized by the Academy is feedback on various aspects of the programmes, gathered through a structured questionnaire. Comments / suggestions, thus received, are collated and synthesized into recommendations for revising prevalent methodologies / approaches on organization and delivery of various courses to introduce future improvements. The following table summarizes the feedback received on various programmes, conducted by NAARM during the period under report.

Programme	Feedback
FOCARS	<ul style="list-style-type: none"> ➤ Overall content and organization of the programme very good and useful ➤ Skills gained in specific areas for becoming a better researcher ➤ Need to reduce the number of theoretical lectures ➤ More time needed for computer practicals.
Senior Programmes	<ul style="list-style-type: none"> ➤ Quality resource material was supplied ➤ Acquisition of new knowledge and skills ➤ Good exposure to different areas ➤ Need improvement and update the materials ➤ New advanced packages are not included ➤ More time needed for practical classes ➤ Case study exercises to be included ➤ Need video shows on relevant topics ➤ Still more hands-on experience needed ➤ Duration may be increased ➤ Opportunities to be given to participants for making presentation of their case materials.
Refresher Courses / Summer Schools	<ul style="list-style-type: none"> ➤ Course content, modus operandi, and practical utility of the programmes satisfactory ➤ Useful and good study material provided ➤ Impressive method of teaching ➤ More case studies and exercises need to be included to ensure variety ➤ Resource material of guest speakers are not provided ➤ Need for more study visits to institutions in and around ➤ Presentation of some topics needs improvement ➤ Need to provide additional training material like publications etc. ➤ Case studies for Indian context and success stories need to be incorporated.

Training : An Effective Tool for Capacity Building - Tips for its Success

Preamble

Training is an important tool for assisting policy leaders, government officials, development project personnel, extension experts, and agriculturists in the realization of their programme objectives and plans. Often, we are faced with the need to change something or to implement a new way of doing something. Training allows us to orient those who will be involved in and / or affected by the change. Also we may need to provide people with new knowledge or new skills that are necessary to implement a change. Training is a potential solution.

Training, however, is often a underestimated activity. Sometimes experts simply think all they must do is communicate to others and change will occur. Development personnel sometimes think they can just hire a technical or subject matter expert to conduct a workshop or a training session. In either case, or in similar cases, the expectation may be oversimplified. Training is a complex activity and must be carefully planned and implemented.

The design and preparation of training is a major activity that usually consumes more time and energy than the delivery of training. Further, training is a key mechanism for developing the skills of individuals those enhancing our human resources. When people's skills are improved, they produce more, are happier and contribute more to the well-being of their families, communities and countries.

Design and Preparation of Training

The design and preparation of training is a major and important activity. It can be focused on a hour long, day long, week long, or year long training course. The Curriculum of a training programme spells out the content to be covered in training, specifies expectations for trainees, delineates procedures for covering content, suggests the methods for facilitating the learning process, identifies ways for evaluating or assessing learning and puts everything in a time frame. Hence, the curriculum becomes a blue-print for the training. If curriculum is correct, and prepared based on the needs of the participants and objectives of the programme, the training is likely to be successful.

Therefore, curriculum development is to be viewed as a process used to determine training needs, prepare training objectives, identify and organize training content, select methods for training, and develop support

materials for training and trainee assessment. It is a process, and is therefore activity – and action-oriented. The result of curriculum development is a course description and lesson plans. The training curriculum informs and guides the trainer in the act of doing training.

Training Process

Generally, there are three phases of training process which are followed in most of the training programmes. They are Planning, Implementation and Evaluation. The details of which are stated below:

Planning : Determining what we want to achieve and how we will achieve it. This phase is essentially the curriculum development process, and it includes a series of steps that, if followed, will help ensure a consistent and effective training effort.

Implementation : Doing what is necessary to achieve our goals and objectives. Implementation is the process of putting training programmes into operation. The planning phase results in a curriculum. At this point we activate the curriculum. We should conduct the training according to the content we have identified and the procedures we have outlined.

Evaluation : Checking to see that we have succeeded in achieving our objectives and, where necessary, making changes to improve training activity results in the future. Evaluation and feedback should normally occur at each step in the curriculum development and implementation phases. In addition, we should conduct formal evaluation at the conclusion of the training activity, using the tests and other learning assessment procedures to determine the level of training effectiveness. What we learn from the evaluation should be used to identify additional training needs and to make changes that will improve the training when it is conducted again.

Steps in the Training Process

1. Determining training needs

Our first step in developing curriculum is to determine training needs. The most effective way to determine appropriate content for training activities is to conduct a needs analysis. Needs analysis is the process of determining

if there is a discrepancy between desired performance and actual performance of the trainees.

2. Specifying training objectives

Once training needs have been identified, we need to describe those needs as objectives worth meeting. Unless training objectives are developed, a training activity cannot be systematically designed to achieve particular outcomes. It has been said that : “ If you’re not sure where you’re going, you’re likely to end up somewhere else – and not even know it.” To avoid this situation, we must be able to state exactly what you want the trainees to accomplish and also what we are willing to accept as proof that they are able to do this.

3. Organizing training content

We should use the training objectives we have developed as the starting point for selecting the subject matter we will include in the training activity. For each objective there is certain information that we can include which the trainees will be able to use to meet that training objective. We will rarely be able to include everything we want to teach. Specifying objectives tells us where we want to go. Organizing content into a lesson plan helps us to plan the details of the lesson.

4. Selecting training methods and techniques

Although outlining the training content is important, just outlining content will not ensure that trainees learn anything. As a trainer, we must be concerned with providing trainees with learning activities that effectively present the training content and help them accomplish training objectives.

5. Identifying needed training resources

At this point, we need to identify the resources we will need to conduct the training. We will need to determine what facilities, equipment, and materials are required. In addition, we must identify necessary administrative and personnel support.

6. Assembling and Packaging Lesson Plans

This is the point where we pull together the training objectives, training content, training methods, and training resources into a plan we will use in conducting the training. The lesson plans serve as our written record of how we plan to conduct the training. They will help in organizing the programmes

on schedule. Most importantly, they will help us to provide effective training that will facilitate achievement of the training objectives.

7. Developing training support materials

Along with the necessary facilities, equipment, and administrative and personnel support, we will be required to develop training support materials. Training support materials are those things that help us teach the training content and help the trainees learn. Training support materials include audio-visual teaching aids, trainer reference materials, trainee handouts and reference material, and trainee learning aids.

8. Developing tests for measuring trainee learning

It is much more difficult for us to measure actual learning that takes place than it is to determine what trainees think about or how they feel about a training activity. It is important to know how trainees feel about the training, since unmotivated trainees are not likely to be involved in the training and, therefore, not learn much. However, more importantly, we also need to know how much trainees are learning.

It is important for us to check trainees' progress along the way. Measuring trainees' learning during the course of training allows you to make necessary adjustments in your pace of instruction and the methods we are using. When we have finished training and the trainees are ready to return to their work, you need to know their skills in performing all the training objectives. Measuring trainees' learning provides you with concrete feedback about what the training programme has achieved.

9. Trying out and revising training curriculum

Once the entire training programme is put together, we should try it out on a small group of people to determine its strengths and the areas that need to be revised. Training programme "try out" includes evaluation of training materials for technical accuracy and instructional effectiveness. Subject matter experts should be involved in the "try out" to provide feedback on the technical accuracy of materials. If possible, trainees and other trainers should be involved in the "try out" to provide feedback on effectiveness of instructional materials and methods.

Conclusion

To make any training programme effective, meaningful and purposeful and to meet the needs of the trainee participants, the planning, implementation

and evaluation of the programme are important factors. And these only will determine the success of the training programme. As it is widely believed that training is the main tool in capacity building of the individuals for his / her success professionally and personally, this wonder tool must be utilized to develop over all efficiency of the organizations which are primarily meant for developing and managing individuals. Therefore, NAARM and the similar kinds of training organizations must involve the various phases and steps in making their training programme result-oriented and creating far reaching effects on the organizations and the individuals working in them.

Compiled by Dr R.K. Samanta

Source : This compilation has been made borrowing heavily from "Planning for Effective Training", FAO, Rome, 1993.

Research Achievements



The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that every sale, purchase, and payment must be properly documented to ensure the integrity of the financial statements. This includes recording the date, amount, and purpose of each transaction, as well as the names of the parties involved.

Secondly, the document highlights the need for regular reconciliation of accounts. This process involves comparing the company's internal records with the bank statements to identify any discrepancies. Regular reconciliation helps to detect errors or fraud early on and ensures that the books are balanced at all times.

Thirdly, the document stresses the importance of timely reporting. Financial statements should be prepared and submitted to the relevant authorities within the prescribed timeframes. This not only ensures compliance with the law but also provides stakeholders with up-to-date information about the company's financial performance.

Finally, the document discusses the role of internal controls in preventing errors and fraud. A strong system of internal controls, including segregation of duties, authorization requirements, and regular audits, is essential for maintaining the accuracy and reliability of the financial records.

Research Achievements

The Academy undertakes focused research in the areas of agricultural research and education management, agricultural policy, research project management, transfer of technology, human resources development and information technology. These are primarily meant to serve as input for various training programmes, workshops organized at the Academy and policy support to ICAR. The management problems encountered by the ICAR institutes and the agricultural universities form the basis for undertaking such research. Besides, some policy issues requiring attention of research planners and administrators for the effective implementation of various agricultural programmes are also considered while formulating research projects. Funding for some of the projects is through AP Cess and NATP. A list of the projects carried out is as follows:

A. Reserch Projects

Sl.No	Project Title	Funded by	Investigators
1	Capacity Building of NARS in Developing Decision Support System Using GIS	NATP	N.H. Rao, M.N. Reddy, S.K. Soam, K.H. Rao
2	Developing of Virtual Campus for Agricultural Research and Education Management	NATP	K. Vidyasagzr Rao, N.H. Rao, M.N. Reddy, K.M. Reddy
3	Performance Assessment and Accountability Enhancement of Indian NAROs	NATP	T. Balaguru, R. Kalpana Sastry, R.V.S. Rao
4	Research Project Management in NARS	NATP	P. Manikandan, T. Balaguru, S.N. Saha
5	Forecasting Trained Agricultural Manpower	NATP	D. Rama Rao, C. Sriram, S.K. Nanda
6	Training Needs of Technical Staff in ICAR	AP Cess	R. Kalpana Sastry, D. Rama Rao, S.K. Soam
7	Developing Instructional Modules for Gender in Agriculture Curriculum	AP Cess	A. Gopalam, S.N. Saha
8	Computer Aided Material Production	NATP	A. Gopalam K.M. Reddy
9	Micro-level Priority Setting – Prioritization of Fisheries Production Constraints	NATP	G.P. Reddy, N. Sandhya Shenoy, B.S. Sontakki, S.K. Soam, V.K.J. Rao
10	Agricultural Gateway to India	NAARM	N. Sandhya Shenoy
11	Transience in Organization	NAARM	M.M. Anwer, B.S. Sontakki, R.V.S. Rao
12	Training Needs Assessment of NARS Scientists	NAARM	R.K. Samanta, N. Sandhya Shenoy, B.S. Sontakki, P. Vijendar Reddy
13	Organizational Climate (OC) in ICAR	NAARM	M.M. Anwer, C. Sriram, B.S. Sontakki
14	Leadership Styles and Effectiveness in ICAR Institutes	NAARM	M.M. Anwer, R.V.S. Rao
15	Role of Government and non-government Organization run Krishi Vigyan Kendras in Agricultural Development with respect to A.P.	NAARM	N. Sandhya Shenoy, K. Vidyasagar Rao
16	Developing Multimedia Protocols and Electronic Exchange of Information for SAU System	AP Cess	A. Gopalam
17	Assessment of Strategic Research Extension Plan (SREP) Methodology for Up Scaling and Institutionalization	NATP	G.P. Reddy, N. Sandhya Shenoy, B.S. Sontakki, V.K.J. Rao

Major research accomplishments

Major activities and accomplishments of the projects during the year 2003-04 are briefly given below.

1. *Capacity Building of NARS in Developing Decision Support System Using GIS*

Objectives:

- ◆ To establish GIS Lab at NAARM
- ◆ Develop agricultural resource and other databases and spatial information systems to provide georeferenced data bases for policy support
- ◆ Develop case studies of GIS based DSS

Progress:

A state-of-art GIS laboratory has been established at NAARM with the following facilities:

Hardware: GIS Server, 5 GIS work stations, One A0 size Scanner, One A0 size digitizer. Software: ArcGIS, Geomedia Professional, Geomedia Grid, MapObjects (for developing deployable GIS based applications), ArcIMS (for serving maps and data on internet), ArcSDE (for managing GIS data in a DBMS), ERDAS (image processing software), AVSWAT (ArcView interface for Soil and Water Assessment Tool)

These facilities enable development of new GIS products including web-based products. They also enable training to cover a wide range of requirements – from limited GIS capability (involving working with pre-developed complete applications when users do not have access to basic GIS tools, or with predigitized maps when users have map viewing and analysis tools but not map creation tools) to full GIS capability involving creating maps and detailed geographic analysis.

A GIS based product, SISAg (Spatial Information System for Agricultural Production and Resources) has been developed. SISAg is user-friendly software that combines GIS maps of States and Agroecological regions of India with 30-year data sets (1970-2000) at the State level of agricultural production, resources and socioeconomic development indicators of relevance to agricultural research policy and planning. It allows users to map, update and analyze the data. SISAg does not require users to have access to GIS software as it is developed in Visual Basic and MapObjects

and can be used on any system operating on MS Windows. SISAg's main Functions are:

- * Display key resources, production and productivity indicators as maps
- * Displays specific properties of agroecological regions and subregions based on the classification of NBSS&LUP
- * Allow the thematic data to be viewed in tables
- * Obtain time series plots of the indicators for each state
- * Users can update the databases and add new map layers
- * Easy dissemination of data and maps

SISAg is basically a technology demonstration project. Deployable GIS based applications for client research organizations, which do not have the resources to invest in GIS tools, can now be developed at NAARM. The client organizations need to specify the map layers and data of interest. They can be integrated into a deployable application using Visual basic and MapObjects. Users can continuously update their databases and add new map layers when required.

SISAg is available free of charge from NAARM website. It can be downloaded and installed by users on their computer systems.

Case studies of GIS based DSS

- a) *Preparing a GIS Project:* A case study covering all essential aspects of implementing a GIS project has been prepared for training in using ArcGIS with data of rice production in Andhra Pradesh as an example. The study covers map digitization, developing thematic maps, map overlays and linking external databases in MS Access to the GIS. A detailed manual giving step-by-step procedures has been prepared and used in training programmes. The manual is also available from the NAARM Web site's Virtual Learning Centre.
- b) *Decision support framework for watershed management:* A case study on watershed management was initiated during the year. A 430 sq km watershed (KK-3) in Mahbubnagar district was chosen for this purpose. The DSS framework based on the ArcView – SWAT (Soil and Water Assessment Tool – model) interface has been finalized and the required data themes were assembled.
- c) *Case study on crop-livestock integration for microlevel planning for sustainable livestock management in dry-land areas (SK Soam/KH Rao):* A case study is being developed for sustainable management of livestock in dry-land areas; the major emphasis will be on crop-livestock integration for sustainable growth and utilization of locally available natural resources.

The survey for livestock data has been completed and PRA studies have been carried out in two villages.

2. Development of Virtual Campus for Agricultural Research and Education Management

Objectives:

- ◆ To provide opportunities for scientists of NARS, to learn and contribute to Agricultural Research and Education Management
- ◆ To provide accessibility to the scientists to get the management training at any time and anywhere without disturbing their work schedules
- ◆ To cover more number of scientists in less time and money
- ◆ To make use of contemporary information technology tools for effective and interactive training on internet

Progress:

The web pages with links and navigation facility for the topics on the areas including agricultural research management, information management and HRM were developed and deployed on the NAARM website (<http://icar.naarm.ernet.in>). For the convenience of the learners download and feedback features were incorporated at the end of the each topic. The following features were also incorporated for effective browsing and interaction of each topic.

- * Provided user friendly navigator facility with easy searching in the pages
- * At the end of the module an interactive mailing for self testing and downloading material for hard copy is provided

The virtual center has been used as a demo to the participants of the training programme related to distance education training and design and development of web sites. Based on the feedback received from the participants necessary modification has been done. This web site is also being used by the faculty in the classroom lectures whenever needed during the trainings on computer applications and web based designing.

3. Performance Assessment and Accountability Enhancement of Indian NAROs

Objectives:

- ◆ To build NAARM's capacity in the area of organizational performance assessment and accountability enhancement

- ◆ To introduce innovative organizational performance assessment methods and processes for improving the performance of research institutions in ICAR

Progress:

In the form of case study, the performance assessment of Regional Agricultural Research Stations at Lam and Palem of Acharya N.G. Ranga Agricultural University and Project Directorate on Poultry and Directorate of Oilseeds Research of ICAR was completed in terms of productivity ratio (output), impact (outcome), performance ration (management domains) and constraint ration. Performance assessment methodology including output assessment (productivity), outcome assessment (impact) and management assessment (performance and constraints) was finalized. Other output indicators like improved technology generated, improved management practices, publications and reports, training programmes conducted, dissemination events organized and public services provided were found suitable.

4. Research Project Management in NARS

Objectives:

- ◆ To study the existing system of project planning, implementation, monitoring, and evaluation of research projects
- ◆ To propose a comprehensive system for effective research project management.

Progress:

In order to study the system of research project management in NARS, three questionnaires were developed, one each for scientist, Head of the Division, and for in-charge, Technical Cell. Response was received from 120 HODs, 238 working scientists, and 25 Technical Cell in-charges. The information received through the questionnaires are being analyzed. The following are some of the findings that have emerged.

The average number of projects that are in operation in the ICAR system as well as in SAUs seems to be rather high. There is, therefore, a need for consolidation as well as operation of research in a true project/programme mode. SRCs appear to be more a regular feature (either half-yearly or annual) in the ICAR system as compared to the SAU system. Institute-level review is the major process of ex-ante evaluation in the ICAR and SAU system, and outside peer review constitutes a relatively less proportion in the ex-ante

evaluation. Monitoring of research projects appears to be a more systematic and regular activity in the ICAR system than in the SAU system. Project monitoring team, constituted for the purpose, is one of the major monitoring mechanisms in the SAU system, whereas such a system is not very prominent in the ICAR system. Financial and administrative problems are indicated as major problems faced during the implementation of projects in the SAU system. Interestingly, administrative and financial problems are not major implementation hurdles in the ICAR system. Apart from the mid-term corrections effected during project implementation, monitoring had also resulted in termination of projects in a few ICAR institutes. Objectives not being achieved satisfactorily, progress being not satisfactory, and project being not broad-based to answer queries arising out of new challenges were indicated as reasons for termination of projects. Internal evaluation seems to be more predominant in the ICAR system whereas external evaluation is more prevalent in the SAU system. Final report availability, achievement of objectives, technologies generated, and publications made, listed in the order of importance, are some of the major criteria followed for evaluation, both in ICAR and SAU system.

5. Forecasting Trained Agricultural Manpower

Objectives:

- ◆ To estimate the present stock and supply of agricultural graduates.
- ◆ To assess the manpower needs in agriculture.
- ◆ To provide policy guidelines for planning agricultural education.

Progress:

Based on the published consultancy reports, broad issues for data collection were identified.

Through a questionnaire survey, information on students, profile of employing organizations, perception of PG students and senior executives on agricultural education, and plans of SAU's on revamping education were collected. So far, data on all these items were collected from 240 students, 75 alumni, 15 agricultural universities and 45 organizations. Based on the available data, coupled with earlier studies, manpower demand–supply estimates were made for different sectors. Opinion of Chief Executives of private fertilizer, seed, chemical, machinery and industry were taken through personal discussion.

The analysis will focus on implications on desired future agri-education.

The basic data collected so far indicates that the stock of agricultural graduates increased from 60,700 in 1971 to 2,38,605 in 2000, and that of veterinary graduates increased from 14,843 to 46,708 during the same period. The responses on various issues were analyzed to rank the issues based on per cent responses. Currently, majority of graduates were distributed in government (50%), private (20%), academic (7%) and research (6%) sectors, in that order. Maximum annual demand was noticed from private sector followed by academic and research and government sectors. Important reason for joining PG programme was cited due to interest in teaching and research by 39%, jobless situation with UG degree by 28% and better employment opportunities by 18% respondents. As far as preferred sector is concerned, research and academic sector in government stands first (52%). Financial benefits (52%), job security (20%) and facilities (13%) are found to be the major reasons for job preferences. Some of the difficulties identified in finding a job include skills not matching the available job (31%), low job demand (28%) and inability to diversify (26%). It is planned to further refine the past data collected by incorporating the latest ones currently under collection and forecast the manpower requirement

6. Training Needs of Technical Staff in ICAR

Objectives:

- ◆ To identify training needs of technical personnel for creating an “enabling” environment of learning system to achieve organizational excellence
- ◆ To evolve a base document for training policy of personnel identified above

Progress:

The project envisages to organise series of brainstorming sessions across the country to elicit opinions of technical staff and then supplement it with outcome from structured questionnaire and personal discussions. The project outcome is as follows.

- * Identified contact persons from 59 ICAR institutes out of 95 institutes.
- * Developed the questionnaire for survey of opinions on training needs of technical personnel and pilot tested at five ICAR institutes in Hyderabad.
- * Total 2693 questionnaires were mailed to technical personnel in 59 institutes. 977 responses were received from 39 institutes.
- * Data base of technical staff was completed for 48 institutes.
- * Completed five brainstorming workshops. The issues identified through the brainstorming sessions are areas of training, criteria of training and issues in training.

7. Developing Instructional Modules for Gender in Agriculture Curriculum

Objectives:

- ◆ Development of three resource modules on impact of gender, trends in gender, and gender time management.

Progress:

Developed three Instructional resource modules on impact of gender, trends in gender and gender time management both in print form and also in interactive lesson delivery system using Director 8.5 adopting the script options using apt visual support. A book entitled Gender in Agriculture was developed in print form and was sent to all the Vice chancellors and Deans of instruction of State Agricultural Universities. The responses were sought in order to determine the suitability and applicability for introducing this a course at undergraduate level. Forty responses were received indicating the suitability of this material for an appropriate course at undergraduate level in their respective universities.

8. Computer Aided Material Production

Objectives:

- ◆ Development of Nutriguide for nutritional assessment
- ◆ Development of software for training evaluation
- ◆ Development of high value resource materials for learning teaching using multimedia

Progress:

Three CAI modules on Soil Science, Management of People and Educational Technology Terms and Concepts were developed. A presentation on the developmental aspects of CAI materials was made at Agricultural College and Veterinary College, Tirupati and extensive feedback was obtained.

9. Micro-level Priority Setting – Prioritization of Fisheries Production Constraints

Objectives:

- ◆ Data collection from coastal states, analysis and writing report
- ◆ Organize one capacity building training programme on Agricultural Research Prioritization Techniques

Progress:

Analysis of data collected on fisheries production constraints collected from 150 fishermen/aquaculturists of four coastal states revealed 12 major categories of constraints like seed, feed, diseases, management, constraints, input, harvest, post-harvest, labour, extension, infrastructure, marketing and miscellaneous. Organized a National Workshop on Methodologies for Prioritization of Fisheries Research, which was attended by 60 delegates. The Yield loss Approach and Rank Based Quotient (RBQ) methods were presented as prioritization methodologies were presented and discussed in the workshop. Modified RBQ method was accepted for prioritization of production constraints in culture based systems while weighted scoring method was suggested for capture based system.

10. Agriculture Gateway to India

Objectives:

- ◆ Preparation of database on professional women in agriculture
- ◆ Data conversion into electronic form for working PWA database in AGI

Progress:

Updated information for different categories pages (21) linked from in the AGI Home page and the States pages regarding the Regional Agricultural Research Stations and Institutes (RARS & I) and Agricultural Technology Information Centres (ATICs) to prepare directories that would be found useful for the extension functionaries, farmers and others to be hosted on the Agriculture Gateway to India (AGI) website. Collected and compiled information for the Women Agriculture Professionals in India for the directory to be hosted in the AGI site which would be helpful for networking of the women professionals and organizations involved in agriculture research, education and transfer of technology.

11. Transience in Organization

Objectives:

- ◆ To investigate the readiness of the scientists of NARS in Transience management
- ◆ To monitor the progress of implementation of the agenda for change in 19 ICAR institutes through monthly frequency

Progress:

A Director's Workshop on Transience Management was conducted from October 27 to 30, 2003 and road map for transience management for 19

ICAR institutes was prepared after sensitizing the Directors of these institutes to the need, principles and practices of change management. Monitoring of the plans has commenced.

12. Training Needs Assessment of NARS Scientists

Objectives:

- ◆ To study the profile and training needs of the agricultural scientists in NARS with reference to their human resource development / research management
- ◆ To undertake job analysis of junior, middle and senior level agricultural scientists to determine their needs in research management and personal growth
- ◆ To study the perceptions and attitudes of the agricultural scientists in different levels regarding the training in research management and human resource development and
- ◆ To plan training strategies for agricultural scientists in NARS for their agricultural research management, in personal development by NAARM

Progress:

Based on the objectives of the project, a specially designed questionnaire was mailed to all scientists and teaching faculty of ICAR Institutes and SAUs during September – October 2003. Till March 2004, about 1300 filled-in questionnaires were received from the respondent-scientists and teachers. Presently, the scoring and tabulations are in progress. Hopefully, the analysis, interpretation and report will be made by July 2004.

13. Organizational Climate (OC) in ICAR

Objectives:

- ◆ Development and finalization of instrument to assess OC in ICAR institutes and plan for mailing
- ◆ Literature survey to identify dimensions and instruments to assess OC

Progress:

Extensive literature survey has been completed and 17 Instruments were identified to be useful for this project. Keeping in mind the above review a draft of the instrument was developed containing 25 items for use in the study. 12 dimensions of Organizational Climate have been identified. These include Orientation, Interpersonal relations, Supervision, Managing problems,

Managing mistakes, Managing conflicts, Communication, Decision making, Trust, Rewards management, Risk taking and Management of change. In each of these 12 dimensions 6 motives were found to be important. These include Achievement, Affiliation, Expert Influence, Control, Concern for others and Dependence.

14. Leadership Styles and Effectiveness in ICAR Institutes

Objectives:

- ◆ Selection and finalization of instruments for leadership study and organize their administration
- ◆ Evaluation of leadership instrument(s) for the study based on the electronic and literature survey

Progress:

Electronic database was surveyed. It was found that the instruments on the websites are only for commercial utilization on payment basis and it is being explored whether these could be useful for our study. The survey of literature has yielded 23 different instruments to study the various dimensions of leadership. These instruments are being evaluated for selection for use in the study.

15. Role of Government and non-government Organization run Krishi Vigyan Kendras in Agricultural Development with Respect to A.P.

Objectives:

- ◆ To compare NGO & GO KVKs on selected Organizational and Work Group variables
- ◆ To find inter-institutional linkage patterns of NGO & GO KVKs
- ◆ To note the constraints in performance and suggestions for improvement

Progress:

Sample covered a total of six KVKs - three each of NGO and GO (University) KVKs established up to 1995, selected randomly from three regions of Andhra Pradesh state viz., ARS, (ANGRAU) Amudalavalasa and Vinayashram KVK, Cherukupalli from Coastal, JVRHRS (ANGRAU) Malyal and Prakasam KVK, Jammikunta from Telangana, MC Farm (ANGRAU) Mahanandi and SHE & CS, Yagantipalli from Rayalaseema regions. Three types of interview schedules were developed separately for data collection from the KVK in-charges, KVK staff and the clientele groups. Under each KVK, a total of 30 respondents from the client groups representing farmers, farmwomen and farm youth categories were selected through stratified random sampling

method. Data is collected by personal interviews and appropriate statistical tools are used for data analysis. The variables for the study included, the organizational variables such as infrastructure facilities, budget, manpower, workgroup variables such as group cohesiveness, and the performance indicators such as trainings, adaptive research trials, demonstrations, extension activities, HRD activities for staff, PRA application and collaboration and linkages with other organizations.

Major Findings:

- ★ Staff turn over is the major problem in NGO KVKs
- ★ Vacant job position is the major problem in GO (University) KVKs
- ★ Inter-institutional linkages varied and many regarding the NGO KVKs
- ★ Transport facilities are insufficient for extension work, particularly in GO (University) KVKs
- ★ Services are not readily accessible to client groups from some GO (University) KVKs situated in remote places with no proper facilities
- ★ Adaptive Research Trials is given less attention, as there is meagre budget for this head
- ★ There is inconsistency in allotment of budget over years between the training activities
- ★ Expenditure on demonstrations is consistent across the years in both GO (University) and NGO KVKs
- ★ Group cohesion is present in all KVKs
- ★ PRA application is almost nil in all KVKs
- ★ Sufficient budget provision need to be made to encourage HRD activities for KVK staff in both GO (University) and NGO KVKs
- ★ Communication facilities in general not satisfactory in both GO (University) and NGO KVKs (FAX, email facilities nil, no computer except in one NGO KVK)
- ★ Experiment farm area and land utilisation comparatively less in sampled GO (University) KVKs as compared to NGO KVKs
- ★ Clientele wanted more on farm trainings than institutional trainings
- ★ Clientele groups wanted the KVK to be accessible and not in remote areas.

16. AP Cess Research Project on Developing Multimedia Protocols and Electronic Exchange of Information for SAU system

Multimedia protocols for instructional lesson modules were developed using the video, audio, photographs, pictures and other visual sources. The scripting protocols were developed in order to capsule these lessons for electronic exchange of information. Different presentation platforms were test tried and most viable presentation techniques were short-listed. A document for enlisting the experiences as case studies was developed and printed. This

document will now be transmitted to various universities in order to sensitize the instruction providers for using them in the instructional area. A step by step procedure is now being worked out for the development of multimedia lesson modules and a guide manual for the university teachers is being prepared.

17. Assessment of Strategic Research Extension Plan (SREP) Methodology for Up Scaling and Institutionalization

Objectives:

- ◆ To review the SREP methodology followed in the pilot districts with a focus on linkages and identification and prioritization of research, extension and development issues
- ◆ To analyze the mechanism followed in each state for implementation of SREP outputs in operationalizing strategies evolved
- ◆ To identify the gaps in SREP methodology and its implementation process and suggest appropriate measures to overcome the gaps, and
- ◆ To evolve future directions for up scaling and institutionalization of SREP approach

Progress:

The project has been implemented in 28 districts of seven states. PME task force advised NAARM to select atleast 14 districts to do the assessment. Accordingly the team visited Khurda - ATMA to have a look at ATMA's working mechanism. Following the visit the team developed instruments for collection of data from different stakeholders involved in ATMA. Accordingly data collected from different districts of Punjab, Himachal Pradesh, Bihar and Jarkhand.

B. Academic Research

The following students belonging to different educational institutions have registered with NAARM faculty for their research work.

Sl. no	Name of the Student	Name of the College / University	Student degree	Super-visor(s)	Title of the Project
1.	Ms P. Pushpa Latha, Ms V. Shanthri Sree	JNTU Hyderabad	M.Tech (Geo-informatics)	M.N.Reddy	Sustainable Agriculture using GIS and Remote Sensing and Statistical Tools
2.	Ms Sailaja	BITS, Mesra, Ranchi	Ph.D. (GIS & remote sensing)	N.H.Rao	Decision Support System for Rice Management Using GIS
3.	Mr K.Seetharama Rao Ms M. Shailaja	Bankatlal Badruka College for Information Tech. Kachiguda, Hyd.	MCA	N.H.Rao	GIS based MIS for Watershed Management
4.	Mr Harsha Mr Ravikrishna Mr Anand Mr Rajgopal	MVSR Engineering College Hyderabad (Osmania University)	B Tech (Civil)]	N.H. Rao	GIS based Watershed Management Decision Support Framework Using AVSWAT: Watershed Delineation and Characterizat
5.	Ms B. Saritha Ms Deepti Arya Ms N. Suma Mr M. Vijay	K.P.G. College, Ibrahimpatnam, R R Dist. A.V. College for P.G. Centre, Hyd.	MCA	G.R.K.Murthy M.N.Reddy	Online Training Database Management
6.	Mr Shajihuddin Mr K. Imran Khan	MESCO Instt. of Mangt. & Computer Sciences, Hyd.(Osmania University)	MCA	N.S. Shenoy M.N.Reddy	Dynamic Web Based System on Women Agricultural Professionals in India
7.	Mr K. Venkat Murali Mr Krishna, Mr N.V.L. Narasimham	Bankatlal Badruka College for Information Technology Kachiguda, Hyd.	MCA	D. Ramarao G . R . K . Murthy	Online Delphi Forecasting tool
8.	Mr V.N. Chakrapani	Dhirubhai Ambani Instt. of Infmn. & Comm. Tech., Gandhinagar Gujarat	MS-IT (Ag)	D. Ramarao M.N.Reddy	GIS based Information System for Agricultural Education
9.	Mr K. Srinivas, Mr R. Uday Kiran	Dhirubhai Ambani Instt. of Infmn. & Comm. Tech., Gandhinagar Gujarat	MS-IT (Ag)	D. Ramarao M.N.Reddy	Online Mass Mailing System
10.	Mr T. Ashok Vardhan Reddy Mr K. Srinivas Ms P. Sandhya Mudiraj	Jayaprakash Narayan College of Engg., Mahaboobnagar (JNTUniversity)	B. Tech.	M.N.Reddy/ D. Ramarao	Call Login System
11.	Mr Laxman Ahire	YCMOU, Nasik	M.Sc. (Ag. Extn)	N.S. Shenoy	i) Training Needs Assessment of Young Scientists in Agricultural Research Service ii) Assessment of Training Needs of Mango Production iii) Agricultural Development Plan for Reddypalem Village

Projects Description:

1. Sustainable Agriculture using GIS and Remote Sensing and Statistical Tools

The broad objective of the research project is to develop GIS based decision support system to assess sustainable agricultural practices and agrobiodiversity. Data on crop production, land use, live stock population, weather variables, socio-economic variables such as population and literacy etc. at mandal level for three time periods in the districts of Nizamabad and Karimnagar are collected. The total number of districts are 92 and the data for all the mandals are collected. Apart from this statistical data, satellite remote sensing digital data of IRS IC/ID is also acquired from NRSA to assess the current land use pattern in these two districts. The decision support system is the interface of the above data base with the statistical analytical tools to assess spatial and temporal trends in GIS environment. Data is computerized and the standardization of analytical procedures is in progress.

2. Decision Support System for Rice Management Using GIS

The focus of agricultural production is changing from quantity towards quality and sustainability. These transitions force farmers and agricultural advisors to deal with increasing bulk of information. They need to analyse vast and sporadically located information resources. Often the task of select, combine and analyse the information is demanding. For this reason development of personal computer based Decision Support System (DSS), with one or many embedded components like expert systems and databases has become a major activity of the agricultural scientific community. DSS will provide an effective conduit for the transfer of scientific knowledge from research institutions to the end users in order to enable them to efficient decision-making. Normally these systems require large amounts of up-to-date input data. PCs do not appear to be the optimal platform for such dynamic DSSs.

In order to carry out practical investigations on combining the advantages of DSSs for knowledge transfer with the advantages of the internet for information transfer this study was aimed to develop web based decision support systems using GIS for rice management. Major rice growing district of Andhra Pradesh was selected for this study.

3. GIS Based MIS for Watershed Management

A GIS based product, SISAg (Spatial Information System for Agricultural Production and Resources) has been developed. SISAg is a user-friendly software that combines GIS maps of States and Agroecological regions of

India with 30-year data sets (1970-2000) at the State level of agricultural production, resources and socio-economic development indicators of relevance to agricultural research policy and planning. It allows users to map, update and analyze the data. SISAg does not require users to have access to GIS software as it is developed in Visual Basic and MapObjects and can be used on any system operating on MS Windows.

4. GIS based Watershed Management Decision Support Framework Using AVSWAT: Watershed Delineation and Characterization

A GIS based decision support framework for watershed management in rainfed semi arid tropics in India using commonly available data was developed using ArcGIS and AVSWAT interface. The KK3 watershed (about 450 sq km) in Mahbubnagar district is chosen as the case study area for the development of the framework. The spatial database of the different features of the watershed – topography, stream network, and soils – was created in ArcGIS to assess their spatial variations based on available maps and data. The watershed was delineated into subwatersheds to identify their distribution and the hydrologic connections between them in AVSWAT. The subwatersheds were characterized into homogenous land units with respect to the soil and land use conditions to facilitate management interventions for soil and water conservation.

5. Online Training Database Management

A software for online management of training database is being developed with the objectives of abstracting the data related to the training programmes organized by NAARM, submitting the application form online to take part in any training programme and information on status of selection of participants online.

Provisions for accessing the database are created for different types of users, i.e.,

- Data administrator to access the database and add new entries of training programmes and receiving the online applications of aspiring participants for any training programme and summarize them
- General users to access the training programmes in the offing and apply them online and see the status of their application
- NAARM faculty to abstract the information of training programmes by using various queries

6. Dynamic Web Based System on Women Agricultural Professionals in India

Women's participation in science and agriculture as professionals increased significantly during the past decade in India. To mainstream women in developmental programs are being designed to further the role of women in development through institutional strengthening with active support from parliament, the highest body of the government. The Academy, as a premier Institute in the area of Agricultural Management is involve in crystallization of the policy issues related to the agricultural professionals. It had addressed the issues of professional women in agriculture, which is the current need of the agricultural system, as their percentage inflow into the system as work force is on exponential rise – be it in agriculture, animal sciences or allied fields rapidly changing the work scenario in the country. The agricultural women graduates have a key role in effective transfer of agricultural technologies to the farming community, especially to rural women. This human resource can be effectively utilized to cater to the needs of the rural women. To be effective as agri-professionals, networking among the professional women in agricultural research, education and transfer of technology on one end and NGOs and other grass-root level social organizations working with rural women on the other end is essential which ultimately result in strengthening professional women – farm women interface. Therefore, a dynamic searchable database on Women Agricultural Professionals in India (WAPI) is to be designed to serve the networking needs of professional women in the field of agriculture. The prototype of the same is prepared and after including all the data received from the ICAR and SAUs and testing it will be hosted in the Agricultural Gateway of India (ACI) site. In this data base the search criteria on commodity, organization, disicpline have been included.

7. Online Delphi Forecasting Tool

The analysis tool for technology forecasting using Delphi method is developed for seeking the expert opinion online. This tool is developed in visual basic 6.0 and uses Microsoft Access for storing the user responses. The tool is user-friendly. The broad features of this tool are :

- The moderator can maintain a question bank for posting them to panelists
- The panel of experts can input their judgment and justification for their response.
- The moderator can view the responses dynamically and the comments or justifications given by the panelists
- Once consensus is reached, the moderator can withdraw the event from subsequent rounds

- Reports are generated at the end of each round / session. This report can be printed.
- After first round, the panelists can view the previous round group results graphically.

8. GIS based Information System for Agricultural Education

The current project has been developed with the objectives to provide database of agricultural universities and colleges of India, location-wise by using GIS technology and to provide query based reports to meet the users requirements.

Presently there are 35 Agricultural Universities with about 200 Colleges providing undergraduate, postgraduate and Ph.D. programmes in various disciplines of agriculture in India. The information about the activities of the colleges and SAUs is not available on web. Broadly this system contains general information of the universities and colleges showing location wise in the map.

The GIS software's Geomedia Professional and Map Objects 2.1 are used in the development of this project. Other application tools like Visual Basic and Microsoft Access are used to provide the user interface.

The project was completed as a stand alone application and it can be put in the website using IMS server. The Application window of the project consists of a toolbar having zoom in, zoom out, pan, identify, and full extent buttons and a combo box. Selecting universities in the combo box will display all the locations of universities on the map in point feature and same will happen with the colleges option in combo box. The Identify tool in the toolbar will help in displaying the relevant data of the point where it was clicked.

9. Online Mass Mailing System

This project mainly aims at development of online registration and mail delivery system of the newsletter for the National Academy of Agricultural Research Management institute. This allows the users to register online for NAARM newsletter. The users data will be directly added to the database and thus registered users will get the NAARM newsletter through bulk mail delivery system. The users can unsubscribe if he no longer wants the newsletter.

This mail delivery system is developed for Windows of versions NT or more. The main scripting languages used are: ASP, JavaScript and HTML. Database used is maintained in MS ACCESS.

User can register to the newsletter through online. Users can unsubscribe if they donot want the newsletter by a click on the unsubscribe button on the newsletter. No two users can register using same email address. The users data is stored directly into the database. The newsletter is sent in the mail body and not as an attachment. Provision for viewing the registered user details like name, email. Mail is delivered to all the users who registered automatically. It is simple to use as the editors need to paste the content of the newsletter and send it. Images can be inserted into the content of the mail.

10. Call Login System

Web based Call login system was developed to receive the complaints on computer hardware and software. All the NAARM users having mail account can access this and make their complaint online. The status of complaint can be seen by the user online. This software was developed using Visual Basic with MS Access database. The system permits Administrator (Incharge, Computer Lab) to make any changes whereas users can enter the complaint and the maintenance people can enter the progress.

11. i) Training Needs Assessment of Young Scientists in Agricultural Research Service

As a part of M.Sc. (Ag Extension) in YCMOU, four satellite research projects have to be completed in addition to the a main research project. In this connection, a satellite research projects viz., "Training Needs Assessment of young scientists in Agricultural Research Service" was completed in this academic year. For this project, data was collected from 50 newly recruited young scientists of ICAR.

The salient findings are as follows:

Majority (60 percent) of the scientists in the sample are in age group between 29 to 31 years. All scientists are post- graduates, while, 64 percent had a doctorate degree. 72 percent of the sample scientists belonged to the agriculture and horticulture backgrounds. Around 50 percent of them said that while facilities for communication and audio-visual aids are available adequately at their institute level, the access to these communication facilities is inadequate. Around 55 percent of scientists opined that the research facilities should be geared up by the ICAR institutes and matched with the job activities. The young scientists are more interested of advanced training in their respective field, and more than 50 percent of them wanted additional training in information technology (IT). The scientists belonging to the disciplines of agriculture and horticulture are more interested in advanced training in subject matter with IT.

ii). Assessment of Training Needs of Mango Production Farmers

This is main research project to be completed for partial fulfillment of M.Sc. (Ag Extension) in YCMOU. For this project, data will be collected from 120 mango farmers distributed in six villages in three mandals of Krishna district in A.P.

The project is formulated with the objective to study the socio-psychological characteristics of the mango farmers and to find out the association of personal and socio-economic factors of the farmers with the knowledge and training needs; to find out the knowledge level and adoption by the farmers with respect to mango production for domestic and export purposes; and to identify the training needs and problems faced by the farmers in the main areas of mango production for domestic and export market and note their suggestions for increasing production.

The data collection instruments for both domestic and export oriented mango farmers have been prepared and are ready for pre-testing and standardization.

iii). Agricultural Development Plan for Reddypalem Village

This is second satellite research project to be completed for partial fulfillment of M.Sc. (Ag Extension) in YCMOU. Agricultural Development Plan for Reddypalem village will be developed using PRA method. For this project data was collected from 30 farmers of Reddypalem village. Salient findings of the project are as follows :

The study revealed that all farmers in Reddypalem village are medium farmers. Majority of them are ready to accept the new technologies related to the crops and animals. Farmers are growing mainly maize, cotton, paddy, chilli crops, and pigeonpea, dolichos beans, bringal on small scale. Both male and female are involved in agricultural operations. Farmers didn't have awareness of the weedicides and are using high doses of nitrogen fertilizers. Pest and diseases of cotton, weeds and management, labour scarcity, high cost of cultivation, low market price, high labour cost, lack of storage facilities, lack of financial assistance and shortage of fodder for the animals are the main problems related to the crops and animals faced by Reddypalem farmers. Introduction of BT cotton varieties with staple lengths on par with varieties like Banni and Brahma, use of potash fertilizers and micronutrients, adopting IPM and moisture conservation practices in cotton crop, adoption of integrated weed management, application of potash and zinc fertilizers, inclusion of legume as an inter crop or sequence crop for improving soil fertility, adopting crop rotation, and growing varieties of sweet corn in maize crop, adopting

IPM, using balanced fertilization and avoiding excess use of nitrogen (urea) in Chilli crop, using salt tolerant varieties, zinc in addition to NPK fertilizers, short or medium duration varieties to avoid terminal stress and inclusion of legume preceding or succeeding rice crop are some suggestions for improvement of crop productivity and profitability in the village. Inclusion of legumes like, horsegram in the feed, feeding animals with legume fodders like cowpea, sun hemp along with cereal fodders, using mineral mixture, development of common grazing lands in the unused or wastelands and replacement of local poultry birds with improved breeds like Giriraja or Vanaraja are some suggestions for improvement in the field of animal husbandry, in addition for the village development, adopting drip or sprinkler irrigation, improved composting method, vermicompost utilizing bio-wastes, using cotton stalks for preparing concentrate feed are some suggestions for Agricultural Development Plan for Reddypalem village. Two papers were submitted to the research journals from the satellite research projects.

Policy Studies and Consultation

Strategic planning for agricultural education and training in the newly emerging global context (Dr D. Rama Rao)

The policy paper presents current status of manpower assessment and the need for manpower planning and commercial perspective to agri-education. A brief SWOT analysis of agri-education system is provided. Issues relating to expansion of higher agriculture education, occupational needs, shift in attention from education, regionalization, growing urban character and missing link in agricultural education are discussed in detail. The broad outcome of the study in the form of suggested changes and scope for commercialization of agri-education are illustrated below.

Suggested changes in agri-education

- There is danger that agri-education would be usurped by private players in the new competitive era unless universities adopt a proactive approach.
- With exception to PhD level, it is possible to provide agri-education at all other levels in select demand areas on commercial basis. Commercial aspect brings not only accountability but also tunes the education system to the market needs.
- Flexibility in choice of courses for students. Electives result in greater student's involvement in academic programs. There should be at least three elective courses.
- There is a need to establish linkages of educational institutes with user departments, where students need to work on projects as part of curriculum.
- To meet the future needs there is need to introduce courses like ecology, environmental impact, renewable and non-conventional energy, biotechnology, IT in agriculture, food processing and food technology, feed formulation, artificial insemination and animal products technology that have demand for qualified manpower.
- Vocational courses can be offered in the fields of aquaculture, tissue culture, fish processing, food production, farm automation, navigational engineering, fisheries business management and aquaculture engineering on commercial terms.
- The rising unemployment levels are likely to force the graduates to look for non-conventional occupations. Therefore, it is time for universities to make a beginning to guide the graduates on self-employment.

The above paper was presented at the VCs conference held at ICAR, Delhi, on April 1 and 2, 2004.

Intellectual property management policy for NARS

(Dr N. H. Rao)

An effective policy framework for IP management is a prerequisite to guide decisions on investing in research, promoting innovation, protecting and managing IP used in and arising from agricultural research, and also in forging public-private partnerships. Taking the example of the Indian Council of Agricultural Research (ICAR) developed an IP policy framework for public agricultural research systems in India. The framework is based on assessments of how various international agreements have influenced IP generation and use in agricultural research and how different national and international public systems are responding to the challenge of IP management in agricultural research. A set of policy guidelines are suggested for managing IP in ICAR based on this assessment.

Environmental policy for sustainable management of defence installations (Dr N. H. Rao)

The defence sector in India has generally not been explicitly included within the purview of environmental regulation, perhaps out of deference to the military mission. But this is not likely to remain so into the future. This study presents how procedures for addressing environmental concerns, which are based on developments in ecosystems science and environmental management, can be integrated into the military mission in India. In doing so three factors are kept in view. The first is that land use is vital to the sustainability of the defence mission, but land management is not the primary mission of the military forces. The second factor is that the procedures for protecting and improving environmental quality must be science based. The third factor is that, for effective implementation of an environmental policy, there is a need to have in place a standard management framework that will permit planning, monitoring and evaluating the systems performance on a 'corporate-wide' scale. Accordingly, the paper is developed in three parts. The first part presents an international defence forces perspective on ecosystems and environmental management as applied to the defence lands. The purpose of this is to understand and learn about the processes of integrating environmental concerns into defence planning, so that similar processes can be initiated in India. The question of implementation of environmental management across the defence installations on a 'corporate-wide' process by employing appropriate environmental management systems is addressed in part two. In the final part, the implications of these developments for integrating environmental concerns into defence planning in India are presented.

Policy paper

Under the overall guidance of Director, the policy paper on 'Export Potential of Livestock Products' was developed by Dr T. Balaguru in association with other faculty members viz., Drs N.H.Rao, R.Kalpna Sastry, K.H.Rao and K.M.Reddy, based on the deliberations in the Brainstorming Session conducted in August 2003 at the Academy under the aegis of National Academy of Agricultural Sciences (NAAS).

Consultancy

Proposals to accelerate growth, income generation and employability in agricultural sector through State Agricultural Universities

Planning commission asked IAUA to develop proposal for higher allocation to agricultural universities in order to effectively translate rural developmental activities. Dr D. Rama Rao, Head, ICM Division, NAARM along with Dr R.P. Sharma, Head, Bio-Technology Division, IARI, New Delhi, and Dr J.S. Bhatia, Former Asst. Director General (EPD), ICAR, New Delhi, developed a strategic proposal for IAUA with the following mission, objectives and action issues for budget support.

Mission

To upsurge agricultural sector for accelerating growth for rural employment generation and boosting farm income and in the process leapfrog agricultural universities through a mix of technical and management initiatives.

Objectives

- To develop employment generation programmes for diversified spectrum of rural agricultural work force.
- To develop cost effective technologies, their refinement and dissemination with integrated research for holistic development of agricultural system aiming to boost socio economic status of farming community.
- To develop forward and backward linkages with scientific organizations, line departments and panchyati raj institutions, industrial houses for co-ordinated approach toward effective transfer of technological practices.
- To develop infrastructure for rendering quality services.

Core Issues

The plan proposals have been developed to bring a change and dynamism in the work environment so as to give a boost to the new initiatives. The proposal is in addition to proposal submitted by ICAR to state Agricultural Universities. While drafting the project, some of the core issues taken into accounts include.

Employment generation: All the activities are with twin objectives – Technology development and employment generation as a spin off. The programmes that are likely to have an early spin off in terms of employment generation are preferred. .

Flexibility in operation: The programme can't succeed unless there is great deal of flexibility in execution. In view of the impending threat to the entire system with opening of GATS in 2005, the SAU system need to decentralize and speedup the developmental process. The universities are expected to identify the suitable personnel and set clearly defined targets to realize the goals on time.

Budget estimates: Estimates are made for a period of three years to cover this plan period. Infrastructure support is provided as one time grant and operational cost is provided for three years. The proposals will be reviewed at the end of the plan period and viable activity will continue. Proposals will be stepped up keeping in view of the national and global priorities

Women participation: All the programmes will have women beneficiaries. The programmes will be aimed to empower rural women by improving their skills and providing them support for entrepreneurship development.

Resource generation: Most of the Programmes are aimed at resource generation. Preference being given to those that has potential for a minimum of 20% return.

Activities for budget support

The activities for budgetary support were classified in to the following areas:

- i. Courses for Rural Employment Generation
 - Diploma courses
 - Short term courses
 - Self -financing PG courses

- ii. Skill Empowerment for Effective Transfer of Technology
 - Training farm women
 - Farm workers training
 - University village information link
 - Publications for farmers
 - Agri-business & technology partnership
- iii. Research
 - Target oriented research
 - Documentation of biodiversity (plant, animal and microbes)
 - Maintenance support for research equipment
- iv. Activities for Resource Generation
 - Contractual research/consultancy
 - Poly clinics
 - Input services
 - Research industry partnership (bio tech parks)

Short-term Consultancies

1. Dr N.H. Rao, Principal Scientist, NAARM, acted as a member Project Evaluation Team, Technology Development Board, Department of Science and Technology(DST), Govt. of India for the project proposed by M/S Soft Systems Ltd, a private software firm in Cochin/Bangalore, entitled, 'Development of software solution for agriculture'.
2. Dr K. Vidyasagar Rao, Principal Scientist, NAARM, extended consultancy on statistical data analysis and interpretation of results to the scientists of local ICAR institutes at Hyderabad.
3. The Academy took consultancy work of production of video film on Directorate of Rice Research, Hyderabad in English version. A video on Hybrid Rice in seven different languages (Hindi, Tamil, Kannada, Marathi, Bengali and Oriya) is under progress.



Publications



Publications

Papers in research journals (national/international)

Chandel, B. S. and Rama Rao, D. 2003. Investment on oilseed research in India. Economic and Political Weekly, October 25, pp 4618-4622.

Chandre Gowda, M.J. and **Samanta R. K.** 2003. Para technicians as alternative veterinary services for livestock management, LEISA INDIA, March 2003, pp 27-28.

Chattopadhyay, C., Meena, P. D., **Kalpana Sastry, R.** and Meena, R.L. 2003. Relationship among pathological and agronomic attributes for soilborne diseases of three oilseed crops. Indian Journal of Plant Protection. Vol. 31 No. 2 124-126.

Chowdary, V.M., **Rao, N. H.** and Sarma, P. B. S. 2003. GIS based decision support system for groundwater assessment in irrigation project areas, Agricultural Water Management, 62, 229-252.

Chowdary, V. M., **Rao, N. H.** and Sarma, P. B. S. 2003. A Coupled soil water and nitrogen balance model for flooded rice fields. Agriculture, Ecosystems and Environment (in press).

Kalpana Sastry, R. and Mathur, B. N. 2003. Implications of the W.T.O. agreements for Indian dairy industry. Indian Dairyman, September 2003, Vol. 55, No. 9: 61-72.

Kalpana Sastry, R., Rama Rao, D., Kiresur, V., and Vijayakumari, R. 2004. Forecasting of sesame production in India. J.Oilseeds Res. Vol. 21(1): (in press).

Kannan and **Reddy, G. P.** 2003. Participatory rural Appraisal analysis for watershed management - A case study of Janahi nala watershed, Indian. J. Soil cons.31 (3): 321-322.

Mathur, B. N., Rao, K. H. and Shruti Sethi. 2003. Recent trends in processing of genetically modified dairy foods, Indian Dairyman, 55 (6): 29-35.

Muthukumar, M. and **Rao, K. H.** 2003. Recent advances in assessment of microbial quality of meat, Indian Food Industry, 22(4): 49-52.

- Nanda, S. K.,** Bhattacharya, B., and Satish Chandra, P. 2003. Promoting organic farming in India: Extension implications, *MANAGE Extension Research Review*, 4(2) pp 9-20.
- Narayana Reddy, M.** 2004. GIS and Spatial statistics - Potential tool for developing spatial decision support systems in agricultural research management. *GIS India*. Vol.13 No. 6.
- Rao, N. H., and Kalpana Sastry, R.** 2003. Towards a policy for management of intellectual property in public agricultural research systems in India. *Rights* Vol.9 May 2004. pp 242-269.
- Rao, N. H., Kalyal, J.C., and Reddy, M. N.** 2003. Embedding the sustainability perspective in agricultural research: Implications for agricultural research management in India, *Outlook on Agriculture* (in press).
- Rao, N. H.** 2004. Sustainable agriculture: Critical challenges facing the structure and function of agricultural education, *University News*, Vol. 42, No.8, pp 1-6, 13.
- Rao, N. H.** 2004. Integrating information and communication technologies in agricultural education and research, *University News*, Vol. 42, No.12, 14-19.
- Reddy, G. P.** 2003. Role of Institutions and Institutional constraints in watershed programmes - A case study of Karakala watershed. *Manage Extension Research Review*, Vol. IV, No. 2.
- Reddy, G. P.** 2003. Measurement of technical efficiency in upland rice production in tribal district of Orissa, *Asia Economic Review*. (in Press).
- Reddy, G. P.** 2003. Agro forestry concerns in watershed management. *Manage Extension Research Review*. (in press).
- Samanta, R. K., and Sandhya Shenoy, N.** 2004. Relevance of indigenous technical knowledge for sustainable agriculture. *Kisan World*, 2004.
- Sandhya Shenoy, N., and Rama Rao D.** 2004. Women professionals in agriculture: some employment issues. *Economic and Political Weekly*, Vol. 39 No. 17 pp 1712 - 1716.
- Soam, S. K.,** Raut, A., Anu Sharma, Mishra, D., Manikantan, M. R., and Suman, R.S. 2003. Participatory agro-ecosystem analysis and

identification of problems of a village in Bundelkhand region. *MANAGE Extension Research Review*. Vol IV No.1: 21-31.

Vivek Nirmale, H., **Bharat S. Sontakki**, and Biradar. R. S. 2003. Indigenous technical know-how of coastal fisher-folk of Sindhudurg district in Maharashtra. *MANAGE Extension Research Review* 4 (2): 151 - 161.

Vivek H. Nirmale, **Bharat S. Sontakki**, Biradar, R. S., and Santosh Y Metar. 2004. Assessment of indigenous knowledge of coastal fisher-folk of greater Mumbai and Sindhudurg districts of Maharashtra. *Indian Journal of Traditional Knowledge* 3 (1): 27 - 36.

Vivek H. Nirmale, **Bharat S. Sontakki**, and Biradar, R. S. 2004. Indigenous knowledge of coastal fisherfolk of Mumbai district in Maharashtra. *Karnataka Journal of Agricultural Sciences*. 17 (1): 115 - 118.

Books / Monographs, Technical Articles Published

Abidi, S. A. H., Biradar, R. S., and **Bharat S. Sontakki**. 2000. Human resource development in fisheries research and development. In: Gopakumar, K., Singh, B. N., and Chitrashi, V. R. (Eds). *Fifty years of fisheries research in India*. Fisheries division. Indian Council of Agricultural Research, New Delhi. Pp 176-189.

Balaguru, T., Kalpana Sastry, R., and Rao, R. V. S. 2003. Proceedings of the national workshop held on "Performance assessment of agricultural research organizations" on March 3 and 4, 2003, NAARM, Hyderabad. pp 68.

Balaguru, T., Kalpana Sastry, R., and Rao, R. V. S. 2004. Proceedings of the discussion meeting held on "Performance assessment of agricultural research organizations" on March 20, 2003, NAARM, Hyderabad.

Gopalam, A. 2003. Gender in agriculture – Report of AP Cess research scheme on developing instructional resource modules for gender at undergraduate level.

Gopalam, A. 2003. Multimedia in agriculture – Report of the AP Cess research project on developing multimedia protocols and electronic exchange of information for SAU system.

- Gopalam, A.** 2003 *Krishi Anusandhan prabhand* - compiled the translated version of lectures delivered for the foundation course on Agricultural Research Management Printed and published by NAARM, Hyderabad
- Manikandan, P., and Kalpana Sastry, R.** 2004. Workshop Report. "Universities to introduce agricultural heritage course: Orientation of prospective teachers completed". *Asian Agri-History* Vol. 8 No 2, 2004 (151-153).
- Samanta, R. K.** 2004. *Empowering Rural Women – Issues, opportunities and approaches.* (Ed) BR Publishing Corporation, New Delhi (in press).
- Samanta, R. K., Vidyasagar Rao, K., Sandhya Shenoy, N., and Kumar, K. V.** 2003. Impact of NAARM training in agricultural research project management of ICAR scientists and their training needs (Part II). National Academy of Agricultural Research Management, Hyderabad.
- Rao, K. H., and Singh, S.** 2003. Potential technologies for manufacturing cheddar cheese from buffalo milk, *Compendium of national workshop on "Identification of technologies and equipments for meat and milk products"* held on September 5 and 6, 2003 at Division of Livestock Products Technology, Indian Veterinary Research Institute, Izatnagar, Bareilly. Page: 146-147.
- Rama Rao, D., Kalpana Sastry, R., and Mathur, B. N.** 2003. Strategic planning for agricultural education and training in the newly emerging global context. Paper presented at meeting of the VCs of SAUs & DUs, April 1-2, 2003, Organised by Education Division, ICAR, held at NASC, New Delhi.
- Rama Rao, D., Nanda, S. K., and Kalpana Sastry, R.** 2004. Paper Presented at the "National Conference on tree borne oil seeds as a source for decentralized planning", Organised by MNES, Chennai at PSG College of Technology, Coimbatore, October 28 and 29, 2003. Published in *Renewable Energy Series XII*, Ed. P. Radhakrishna, MNES Regional office, Chennai. pp18-40.
- Soam, S. K. and Thomas Cottier.** 2003. WTO law and intellectual property systems- with focus on management of agricultural research. Manual developed during deputation at WTI, Bern, Switzerland (7th November 2003 - 6th January 2004).

Case Studies

Balaguru, T., Kalpana Sastry, R., and Rao, R.V.S. 2003. Performance assessment of Regional Agricultural Research Station, Palem (1997-2002) Acharya N.G.Ranga Agricultural University, Rajendranagar, Hyderabad, NAARM, Rajendranagar, Hyderabad. pp 92.

Balaguru, T., Kalpana Sastry, R., and Rao, R.V.S. 2003. Performance Assessment of Regional Agricultural Research Station, Lam (1995-2000) Acharya N.G.Ranga Agricultural University, Rajendranagar, Hyderabad, NAARM, Rajendranagar, Hyderabad. pp 91.

Balaguru, T., Kalpana Sastry, R., and Rao, R.V.S. 2003. Performance Assessment of Directorate of Oilseeds Research (1995-2000), Rajendranagar, Hyderabad, NAARM, Rajendranagar, Hyderabad, pp 85.

Balaguru, T., Kalpana Sastry, R., and Rao, R.V.S. 2003. Performance Assessment of Project Directorate on Poultry (1995-2000) Rajendranagar, Hyderabad NAARM, Rajendranagar, Hyderabad, pp 86.

Scientific Reviews

Chattopadhyay, C. and **Kalpana Sastry, R.**, 1998. Retrospectives and perspectives in oilseed pathology In: *Plant Pathology at Crossroads*, Sen, C., Dasgupta, M.K., and Chaudhri, S. (eds.) Prof. Chattopadhyay, S.B. fetschrift vol. Dept. Pl. Pathol. Bidhan Chandra Ch. Krishi Viswavidyalaya, Kalyani, WB. pp.172-302.

Electronic publications

Course Developed on Presentation graphics For Virtual Learning Centre (VLC) NAARM, Hyderabad.

Directory of Regional Agricultural Research Stations and Institutes (RARS&I) Revised in Agriculture Gateway to India web page on NAARM site.

Directory of Agricultural Information Technology Centres (ATICs) Revised in Agriculture Gateway to India web page on NAARM site.

Directory of Women Agricultural Professional In India (under preparation) to be published in Agriculture Gateway to India web page on NAARM site.

Faculty News

Papers presented at national workshops, seminars, conferences, symposia etc.

Balaguru, T. - Concept, importance and management of agricultural information system. Presented at the National workshop on information communication technology held at EEI, ANGRAU, Hyderabad from Nov. 5 to 12, 2003.

Farming systems approach. Presented at the National workshop on strategic research and extension plan, held at EEI, ANGRAU, Hyderabad from Feb. 4 to 11, 2004.

Bharat S. Sontakki - Information technology for agricultural research and education management: Role of NAARM. Presented at the National seminar on information and communication technologies for agriculture and rural development held at Dhirubhai Ambani Institute of Information and Communication Technology (DA-IICT), Gandhinagar on Nov. 18 and 19, 2003.

Gopalam, A. - Production of high value resource materials in multimedia environment. Presented at the information and communication section of 91st session of Indian Science Congress Association jointly organized by Punjab University and Institute of Microbial Technology Chandigarh, from Jan. 3 to 7, 2004.

Developing multimedia package in distance Instructional setting for Gender in Agriculture. Presented at National workshop on communication support for sustaining extension services, Dept. of Extension Education Institute of Agricultural Sciences, Banaras Hindu University, Varanasi, on Feb. 17 and 18, 2004.

“Integration and interactivity with in the print media and electronic formats for extension service “ - Key theme presentation (on invitation) made during National workshop on communication support for sustaining

extension services on Feb. 17 and 18, 2004 Dept. of Extension Education, Institute of Agricultural Sciences Banaras Hindu University, Varanasi.

Rama Rao, D.

Kalpana Sastry, R. &

Mathur, B. N. Strategic planning for agricultural education and training in the newly emerging global context at the Meeting of the VCs of SAUs & DUs, April 1 and 2, 2003, Organised by Education Division, ICAR, held at NASC, New Delhi.

Rama Rao, D.

Nanda, S. K. &

Kalpana Sastry, R. - Strategies for augmenting potential of vegetable oils as bio-diesels, National conference on Tree borne oilseeds as a source of energy for decentralized planning on Oct. 28 and 29, 2003.

Reddy, G. P. &

Bharat S. Sontakki - Methodologies for prioritization of fisheries production constraints. Presented at the National workshop on methodologies for prioritization of fisheries research in India held at NAARM on Nov. 10 and 11, 2003.

Reddy, G. P. &

Samanta, R. K. - Agricultural marketing scenario in India - Rural markets and future challenges - Lead paper in National seminar on Agri-business management - Opportunities and challenges, Nov. 20 and 21, 2003 organized by IIRM, Jaipur.

Reddy, G. P. - Water situation analysis: Orissa, Challenge programme workshop on ground water governance in the Indo-Gangetic and yellow river basin, on Aug. 26 and 27, 2003 at Kolkatta.

Samanta, R. K.

Sandhya Shenoy, N. &

Sontakki, B. S. - Indigenous technical knowledge (ITK) for sustainable agriculture", Proc. 'National conference on traditional knowledge systems in India', organized by IIT Kaharagpur from Jan. 9 to 11, 2004.

Sandhya Shenoy, N. &

Samanta, R. K. - Gender issues in sustainable agriculture. Proc. Extension education for national growth, organized at Agra by ISEE, National Extension Education Congress from Sept. 12 to 14, 2003.

Sandhya Shenoy, N. - "Information and communication technologies (ICTs) for women in agriculture", Proc. Vol.1: 'International conference on women in digital Era – Opportunities and Challenges' WIT 2003, organized by Annamalai University and Software parks of India from Dec. 10 to 13, 2003.

Soam, S. K. - "Agroecological zonation of Bundelkhand: Opportunities of agro- forestry interventions to enhance fodder resources" at national symposium on agro-forestry and sustainable production organized by IGFARI, Jhansi, from Nov. 7 to 9, 2003,

Participation in national workshops, seminars, conferences, meetings, etc.

Anwer, M. M. Behavioural dimension of managing change at NIRD, Hyderabad from April 23 to May 2, 2003.

Workshop of Andhra Pradesh - Netherlands Biotechnology Programme to explore the possibility of congruence of the programme with other developmental programmes on Oct. 13 and 14, 2003 held at Hotel Viceroy, Hyderabad.

Balaguru, T. Export potential of dairy products at NAARM, Hyderabad on Aug. 22 and 23, 2003.

Gopalam, A. 91st Indian Science Congress from January 3 to 7, 2004 at Punjab University, Chandigarh. All India convention on official languages at National Institute of Public Enterprise, New Delhi on March 12 and 13, 2004.

Kalpna Sastry, R. - Harnessing Intellectual Property for Competitive Advantage from July 3 to 5 2003 at IIM, Ahmedabad. Brainstorming workshop on "Export potential of livestock products" sponsored by NAAS on Aug. 22 and 23, 2003.

Seminar on IPR . Sponsored by Delegation of European Commission to India, Bhutan, Nepal, Sri Lanka, Maldives at ASCI, Hyderabad on Nov. 17 and 18, 2003.

A seminar on IPR Laws - Copyright at NALSAR University of Law, Hyderabad on March 13, 2004.

Workshop on guidelines of national council for women – interactive forum for exchange of experiences and information with various organizations at Administrative Staff College of India, Hyderabad on Jan. 19, 2004.

Kalpana Sastry, R. &

Soam, S.K. - Seminar on “Patenting in India and abroad organized by A.P. Technology Development Centre, Hyderabad on Feb. 19 and 20, 2004.

Mathur, B.N. - VCs Conference at ICAR, New Delhi on April 1, 2003.

Inter institutional linkages at LBSNAA, Mussorie on April 16, 2003.

Planning for dairy industry at CII, Chandigarh on May 19 and 20, 2003.

Fifth Regional committee meeting at ANGRAU, Hyderabad on May 30, 2003.

ICRISAT’s External Programme Review (EPR) panel at CRIDA, Hyderabad, on June 19, 2003.

Sectional committee meeting at ICAR, New Delhi, on Aug. 6 and 7, 2003.

Evaluation study / Impact assessment studies of the programmes at Department of Animal Husbandry and Dairying, Krishi Bhavan, New Delhi, on Nov. 27, 2003.

Scientific composite panel meeting of Agricultural education and Home science at ICAR, New Delhi, on November 28, 2003.

General assembly meeting of Afro-Asian Federation of Food Science and Technology Institution at CFTRI, Mysore, on December 7, 2003.

Indian Science Congress Association, Hyderabad Chapter at ANGRAU, Hyderabad, on December 17, 2003.

AMDISA – AACSB workshop on accreditation organized by AMDISA, at Hotel Taj Residency, Hyderabad on Jan. 22, 2004.

Manikandan, P. &

Anwer, M.M. - Leadership and organizational innovation at IIM, Bangalore, during Sept. 8 to 10, 2003.

Nanda, S. K. Harnessing intellectual property for competitive advantage at IIM, Ahmedabad, during July 3 to 5, 2003.

Pathak, S.K. Management of indirect taxes-customs-excise-sales tax-VAT service at IIM. Bangalore, during July 28-31, 2003.

Training programme on New formats of accounts prescribed by CGA for central autonomous bodies (Non-profit organizations) for the FAOs of ICAR, at NIFM, Hyderabad, during September 8 to 12, 2003.

Prakasa Rao, R.V.V.S - Designing and development of institutional publications at NIRD, Hyderabad, during June 9 to 11, 2003.

Rama Rao, D. Cyber laws at CIRE, Hyderabad during Oct. 8 to 11, 2003.

E-Learning and knowledge management organized by M/s Locuz, a software group in Hyderabad, on July 21, 2003.

“Harnessing IP for strategic competitive advantage” at IIMA during July 2 to 7, 2004.

Rama Rao, D. &

Kalpna Sastry, R. - Indo-French Conference at DARE, New Delhi, during April 16 to 27, 2003.

Rao. K.H. National workshop on “Identification of technologies and equipments for meat and milk products” held on September 5 and 6, 2003 at Division of Livestock Products

Technology, Indian Veterinary Research Institute, Izatnagar, Bareilly.

Rao, R.V.S Training programme on Behavioural dimensions of managing change from April 23 to May 2, 2003 at National Institute of Rural Development (NIRD), Hyderabad.

Reddy, G.P 17th National Conference on Agricultural marketing at ANGRAU, Hyderabad from February 5 to 7, 2004.

Samanta, R.K. EDP on Team building on conflict management at Administrative Staff College of India, Hyderabad from July 7 to 11, 2003.

MDP on Pedagogy in management at IIM, Kozhikode from August 29 to Sept. 2, 2003.

AMDISA-AACSB workshop on Accreditation of South Asian business schools held at Hyderabad on Jan. 22, 2004.

Samanta, R.K. & Sontakki, B.S. Strategic research and extension programme at NCAP, New Delhi on March 5, 20.

Samanta, R.K.& Sandhya Shenoy, N. - National conference on traditional knowledge systems in India from January 9 to 11, 2004 at IIT, Kharagpur. Dr Samanta chaired a Technical session on Sustainable non-chemical agriculture.

Sandhya Shenoy, N. - International Conference on women in digital era: Challenges and opportunities at Annmali University, Chidambaram from Dec. 10 to 13, 2003.

Sandhya Shenoy, N. & Kalpana Sastry, R - Interactive workshop organized by NCW on Guidelines issued by Supreme Court at ASCI, Hyderabad, on Jan. 19, 2004.

Sontakki, B.S., & Reddy, G.P. Workshop on strategies and options for increasing and sustaining fisheries and aquaculture production to benefit

poor households in India, organized by NCAP, New Delhi on Jan. 30 and 31, 2004.

Soam, S.K. Patenting in India and abroad at Hotel Tulip Manohar, Andhra Pradesh State Technology Development Corporation (APTDC), Hyderabad, on Feb. 19 and 20, 2004.

Sontakki, B.S. Workshop on ICT in agriculture and rural development at DA-IICT, Ahmedabad on Dec. 18 and 19, 2003.

Lectures Delivered

Anwer, M.M. - "Seven habits of highly effective people" on April 22, June 19, Sept. 24, and Nov. 20, 2003 at WALAMTARI for the participants of 'EDP for Executive Engineers'.

"Team building " on May 30, 2003 at National Institute of Rural Development in the course on Conflict resolution and team building for organizational effectiveness.

"Leadership" to the participants of the senior training programme at ANGRAU, Hyderabad on July 28, 2003.

"Team Work" in the HRD Programme at Extension Education Institute, Hyderabad on Sept. 4, 2003.

"Leadership styles and role analysis" on Nov. 4, 2003 in the programme "Leadership skills" for Executives of the BHEL Corporate R&D.

"Leadership styles" on Dec. 4, 2003 at Extension Education Institute, Hyderabad on Dec. 4, 2003.

"Campus Beautification" on Feb. 9, 2004 in the 32nd Training of Trainers course held at SVP National Police Academy, Hyderabad.

Balaguru, T. "Farming systems approach" at National Institute of Rural Development, Hyderabad on Nov. 7, 2003.

"Concept, importance and management of agricultural information systems" at Extension Educational Institute, Hyderabad on Nov. 11, 2003.



“Farming systems approach” at Extension Education Institute, Hyderabad on Feb. 6, 2004.

“Scientific productivity and accountability” at NCAP, New Delhi on Feb. 9, 2004.

Kalpana Sastry, R. - “Presentaion graphics for scientists” at Extension Education Institute, Hyderabad on Nov. 10, 2003.

“Contract labour” for final year students of MBA students at School of Management, University of Hyderabad on Feb. 13, 2004.

Manikandan, P. - “Conflict management/Impact of conflict resolution” at National Institute of Rural Development, in the course on “Conflict resolution and team building for organizational effectiveness”, held from May 26 to 31, 2003; Acharya N.G Ranga Agricultural University, in the short course on “Capacity building of extension scientists to meet WTO challenges for sustainable agriculture”, held from July 22 to 31, 2003; and Andhra Pradesh Co-operative Bank, in the course on “Leadership development and motivation’, held from July 31 to Aug. 2, 2003; Oct. 9 to 11, 2003.

“Motivation for improved performance” at Andhra Pradesh Co-operative Bank, in the course on “Self development and basic managerial skills’, held from Aug. 4 to 9, 2003; Oct. 13-18, 2003.

“Goal setting and achievement, Self-motivation and motivating others” at Water and Land Management Training and Research Institute, in the programme on HRD held from April 21 to 24, 2003.

“Communication skills for a trainer and training methods” at Andhra Pradesh Co-operative Bank, in the course on “TTP on functional aspects of DCC banks”, held from Jan. 28 to 31, 2004.

Reddy, G.P. - “Forecasting models: Some methods and procedures” on January 27, 2004 in training programme on ‘Advances in agricultural marketing’. Conducted by Department of Agricultural Economics at S.V. College of Agriculture, Tirupati.

Reddy, M.N. - “Statistics for surveying and GIS” to the students of M.Tech in Geo-informatics at Jawaharlal Nehru Technological University, Hyderabad on March 12 and 27, 2004.

“Introduction to agricultural statistics” to the participants of Diploma Course in Plant Protection at National Plant Protection Training Institute, Hyderabad on Sept. 23, 2003.

Soam, S.K. “Concepts of participatory technology development” at AP-Netherlands Biotechnology Programme, village Nandimallagadda, Wanaparthy, Mahabubnagar, on Oct. 8, 2003.

WTO law & intellectual property systems’ at Project Directorate on Biological Control (PDBC), Bangalore on March 5, 2004.

Vidyasagar Rao, K. - “Design of experiments and sample survey techniques” to the participants of PG Diploma in Crop Protection at National Plant Protection Training Institute, Hyderabad on July 16, 2003.

Foreign Visits

Dr S.K. Soam, Senior Scientist, NAARM undergone two months training at World Trade Institute (WTI), Bern, Switzerland under NATP, from Nov. 7, 2003 to Jan. 6, 2004. During his stay at WTI, he attended the course on International Intellectual Property System at Institute of European and International Economic Law, University of Berne. He also attended training on International Patenting System at World Intellectual Property Organization (WIPO), Geneva. Dr Soam conducted research on “WTO and Intellectual Property System with the Focus on Plant Genetic Resources for Food and Agriculture, Biodiversity and Traditional Knowledge”. The outcome of his research is the development of methodology and training manual on “WTO and Intellectual Property Systems” for training the agricultural scientists in India.

Dr K.H. Rao, Senior Scientist, NAARM undergone two months advanced training in Human Resource Management at Fisher College of Business, Ohio State University, Columbus, USA under NATP, from November 21, 2003 to January 20, 2004. He worked with Dr H.R. Unnava,



W. Arthur Cullman Professor of Marketing in the area of organizational Commitment of employees at work place and Strategic Resource Management in WTO regime. He also attended courses on International Human Resource Management, Leadership and Organizational Behaviour. He developed a paper on Strategies for Enhancement of Organizational Commitment in R and D Organizations, which involved developing models and relationships between organization culture, leadership, job satisfaction and organizational commitment. He attended seminars on customer oriented research, and analysis of organizations for strategic planning.

Higher Degrees Awarded

Rao, R.V.S., Senior Scientist awarded Post Graduate Diploma in Human Resource Management (PGDHRM) by Indira Gandhi National Open University (IGNOU), New Delhi.

Honours and Awards



Dr T. Balaguru, Head, ARSMP Division was awarded 'Bharat Excellence Award' by the Friendship Forum of India for the year 2003 in New Delhi. He was also awarded 'Rising Personalities of India Award' by the International Penguin Publishing House for the year 2003 in New Delhi.

- Two scientists of the Academy Drs Jagannadham Challa, Principal Scientist and N. Sandhya Shenoy, Senior Scientist have received appreciation from DG, ICAR for their research achievements being rated as Outstanding for the year 2003-2004.

Rose Show Awards



The Academy bagged the Prince of the Show Trophy at the XXVIII Annual Rose Show organized by the Hyderabad Rose Society at the Sarovar Complex, Hyderabad on Dec.13 - 14, 2003. Apart from the above the Academy bagged best display of roses Trophy, three first prizes, three second prizes and two third prizes under different sections of flower display.

The Academy also bagged Queen of the show Trophy, Best Collection of Floribunda Roses Trophy, Best Collection of Polyantha Roses Trophy, Best Institutional Rose Garden Trophy, four first prizes and four second prizes under different sections of flower display at XVIII Annual Rose Show organized by the Horticultural Society, Secunderabad on Dec. 20 - 21, 2003.

ICAR Inter-Institutional Sports Meet



The ICAR Inter-Institutional Tournament (Zone III) was hosted by the Academy and was conducted at Railway Recreation Club grounds, Secunderabad from November 3 to 7, 2003. Shri Satish Kumar, Senior Deputy General Manager, S.C. Railway and President, SCRSA, Secunderabad inaugurated the tournaments. Dr B.N. Mathur, Director, NAARM, welcomed the participants. Dr M.M. Hegde, Project Director, Directorate of



Samson



Rukmini Ammal

Oilseeds Research was the Chief Guest at the closing ceremony and gave away the prizes to the winners. Dr B.N. Mathur, Director, NAARM presided over.

NAARM won the second overall championship with 64 points. Mr M.K. Samson and Ms K.K. Rukmini Ammal were adjudged best all rounders. Mr M.K. Samson bagged five prizes – First in Discus and Carroms, second in Javelin throw and Shotput and winner in Volleyball team event. Ms Rukmini Ammal also bagged five prizes - First in Discus, Shotput, Badminton (singles) and Badminton (Doubles); second in Javelin throw. Ms Aneeta bagged three prizes - First in Badminton (Doubles), Second in Long jump, and third in Javelin. In the team event for men NAARM stood as winners in Volleyball and Table Tennis.

Four of our NAARM sports persons Dr S.N. Saha, Dr A Debnath, Mr M.K. Samson and Mrs. K.K. Rukmani represented Hyderabad District in Andhra Pradesh State Veteran Athletic Meet held at Vizag during Dec. 2003 and won prizes. Dr Debnath, Mr Samson and Mrs. Rukmani represented Andhra Pradesh State in the National Veteran Amateur Athletic Meet – 2004 held at Lal Bahadur Stadium, Hyderabad, from March 4 -7, 2004. Mrs. K.K. Rukmani stood third in Discus throw in this National Meet.

Visitors

Dr Mangala Rai, Director General, ICAR, New Delhi visited the Academy on May 31, 2003 and addressed the Foundation Course Trainees

Mr K.S. Tyagi, Head of Rachnatmak Prokash, Gayatri Teerth, Hariadwar, Uttaranchal alongwith Mr D.P. Singh and R.C. Srivastava visited the Academy on June 3, 2003

Mr A.K. Bit, Principal Secretary, Agriculture, Uttar Pradesh visited the Academy on June 3, 2003

Dr William C Medrano, Director, Bureau of Agricultural Research, Department of Agriculture, Govt. of Philippines visited the Academy on July 15, 2003.

Mr Suresh Chandra Babu, Senior Research Fellow, Senior Advisor (Training), IFDRI, Washington visited the Academy on August 12, 2003.

Three IAS probationers from the 2002 batch who have been allotted to Andhra Pradesh, undergoing training with Dr M. Chenna Reddy Institute of Administration visited the Academy on August 19, 2003.

Dr D.V. Rangneker, Senior Consultant, NDDDB, Anand along with Dr S. Srinivas, State Director, National Dairy Development Board, A.P. Office, Vijayawada visited the Academy on September 22, 2003.

Participants of the Eighth International programme on "Strategies for sustainable agriculture and rural development" at NIRD visited the Academy on Jan. 17, 2004.

Rev. Shinsei Funahashi, Nichiren Shoshu, Overseas Bureau, Japan, visited the Academy on Feb. 13, 2004.

Dr A.W. Van Den Ban, Extension consultant from Netherlands visited the Academy on Feb. 16, 2004.



A seven member South African delegation led by Ms. B. Nijobe, Director General, Ministry of Agriculture visited the Academy on March 26, 2004 and interacted with Dr R.K. Samanta, Acting Director, NAARM and other faculty members of NAARM on the matters related to training, organizational structure, physical facilities, financial matters, human resources of the Academy.

Students' visit: A total of 425 students visited the Academy during this period. These students belonged to various colleges of different universities, which include Tamil Nadu Agricultural University, Coimbatore; Tamil Nadu Veterinary and Animal Science University, Chennai; University of Agricultural Sciences, Bangalore; College of Forestry, Ponnampet; Rajendra Agricultural University, Bihar; College of Horticulture, Mudigere; Kerala Agricultural University, Trivandrum; Pandit Jawaharlal Nehru College of Agriculture and Research Institute, Karaikal. Agricultural College, Bapatla, Andhra Pradesh; Home Science College, Hyderabad.

Personnel

Director's Office

B.N. Mathur, Director (upto Feb. 10, 2004)
R.K. Samanta, Acting Director (from Feb. 10, 2004)

Joint Director's Office

R.K. Samanta, Joint Director (Training)
Sarada Samanta, Private Secretary

Agricultural Research Systems Management and Policies Division

T. Balaguru, HOD, ARSMP
S.N. Saha, Principal Scientist
N. Hanumantha Rao, Principal Scientist
R. Kalpana Sastry, Senior Scientist
S. K. Nanda, Senior Scientist
B.S. Chandel, Senior Scientist (upto Sept. 12, 2003)
G.P. Reddy, Senior Scientist (from Aug. 4, 2003)
S.K. Soam, Senior Scientist

Human Resource Development Division

P. Manikandan, HOD, HRD
A. Gopalam, Principal Scientist
Jagannadham Challa, Principal Scientist
M.M. Anwer, Principal Scientist
K. Hanumantha Rao, Senior Scientist
R.V.S. Rao, Senior Scientist

Information and Communication Management Division

D. Rama Rao, HOD, ICM
C. Sriram, Principal Scientist
K. Vidyasagar Rao, Principal Scientist
K.M. Reddy, Principal Scientist
M. Narayana Reddy, Principal Scientist
N. Sandhya Shenoy, Senior Scientist
B. S. Sontakki, Senior Scientist
V. K.J.R. Rao, Senior Scientist

Training Cell

R.K. Samanta, Joint Director (Training)
G.R. Rama Krishna Murty, Senior Scientist
P. Vijender Reddy, Technical Officer
N.R. Nageswara Rao, Technical Officer

Administration & Finance

M. Suresh Kumar, CAO
S. K. Pathak, F&AO
Y. Sankara Rao, AAO
P. P. Brahmaji, AAO
C. Bagaiah, JAO
L. Jhansi Lakshmi, Private Secretary
N. Raghunath, Private Secretary

Service Units**Computer Cell**

M. N. Reddy, In-Charge (ARIS lab)
N. H. Rao, In-Charge (Computer lab)
K. V. Kumar, Technical Officer

Farm Section

V. Murali, In-Charge (on study leave)
M. A. Basith, Technical Officer

Health Centre

A. Debnath, Medical Officer

Hostel

Zameer Ahmed, Manager (Hostel Services)

Library

P. Manikandan, In-Charge
P. V. Nirmala, Technical Officer

Maintenance Section

V. Murali, In-Charge (on study leave)
Sohail Ahmed Khan, Junior Engineer

Official Language Cell

A. Gopalam, In-Charge
D. Venkateswarlu, Technical Officer (on study leave)
J. Renuka, Asst. Director (OL)
S. Pradeep Singh, Asst. Director (OL)

Photography & A.V. Services

K. Vidyasagar Rao, In-charge
L. Venkateswarlu, Technical Officer
Bansidhar Nayak, Technical Officer

Press and Publications Section

D. Rama Rao, In-Charge
R.V.V.S. Prakasa Rao, Editor
P. Namdev, Technical Officer

Security

B.Ch. Satyanarayana, Estate-cum-Security Officer

Video Instruction and Production

P. Manikandan, In-Charge
K. R. Prabhakar, Programme Officer (CCTV)
Ch. Janardhan Rao, Technical Officer (On study leave)

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N. Naresh Kumar, VCR Oprtr.
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Sham Bahadur, Catering Incharge.
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M. Mohan Rao, Tech. Elect.
B.S.N. Murthy, Tech. Elect.
K. Obulapathi, Tech. Elect.
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K. Swarajya Lalshmi, JLA
S. Sunder Raj, Media Oprtr.
N. Ashok, Driver
P. Eswari, P.T. Driver
T. Laxman, Driver
G. Muthyalu, Driver
M. Padmaiah, Tractor Driver
U. V. Ratnam, Driver
P. Gaikwad, Binder
N. Prabhakar, Plumber
D.R.S. Rao, Pump Driver
M. Srinivasa Rao, Pump Driver
K. V. Narasaiah, Carpenter

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M. M. Mohan Rao, Veh. Mech.

Grade T-1

B. K. Venkatram, Pump Driver

Administration

Assistants

P.G. Kohad

P. Neelakantam

M. Narasimha Rao

M. Dinesh

K. Prabhudas

T. Srinivas

G. Raj Reddy

Personal Assistants

P. Anand Kumar

A. Mercy

T. V. Ramadas

T. Vanisri

M. Venkatesh

Y. Anuradha

S. Sesha Sai

Rukmani Ammal

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S. Shanthi

V. Shailaja

N. Vijayalakshmi

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B. Padma Saroja

P. Srinivasu

G. Jessie Ecclicia

R. Chandra Babu

M. Sridhar

C. Julilus Samuel

Y. Gayathri

K. R. Ghanashyam

P. Venkatesh

M. K. Samson

B. H. Dharmaraj

Rajashri Bokde

Lower Division Clerk

K. Suryanarayana

Supporting

S. Swamy, Asst. Gestt. Operator

Venkatesham, Xerox Operator

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G. Mani Bai

Grade III

M. Ashok

P. Balraj

C. Bickshapathi

G. V. Bikshapathi

Phool Kumar

B. Santhamma

P. Swamy

M. Yadaiah

Khalid

S. Shakuntala

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B. Bharathamma

S. Jangaiah

K. Kalavathi

K. Satyanarayana

K. Pentaiah

T. Jangamma

P. Yadaiah

M. Narsing Rao

G. Pentaiah

M. Shyam Rao

J. Chandraiah

M. Krishnaiah

Grade I

G. Anasuya
I. Bharathamma
C. Chandramouli
G. Dasaratha
M. Eswaramma
K. Hemlal

Nazia Parveen R. Sattaiah
L. Satyanarayana
N. Sukunamma
A. Yadaiah
M. Yadamma
C. Narsubai
C. Kausalya
D. Vittal

Promotions

Name	From	To
Mr P.P. Brahmaji	Superintendent	Asst. Admn. Officer
Mr C. Bagaiah	Assistant	Jr. Accounts Officer
Mr G. Raj Reddy	U.D.C.	Assistant
Ms S. Shakuntala	SSG II	SSG III
Mr M. Krishnaiah	SSG I	SSG II

New Appointment

Dr G. Parashurama Reddy joined the Academy as Senior Scientist on August 4, 2003. Before joining the Academy Dr Reddy worked for five years as senior scientist at Water Technology Centre for Eastern Region, Bhubaneswar.

Dr G.R. Ramakrishna Murty joined the Academy as senior scientist on March 1, 2004. Before joining the Academy Dr Murty worked as Asst. Professor at IIT, Kharagpur.

B.N. Mathur, Director, NAARM Relinquished Office

Dr B.N. Mathur, Director, NAARM took voluntary retirement on February 10, 2004. He joined the Academy on November 1, 2002. During the short span of his service at the Academy, Dr Mathur introduced new management initiatives, took proactive part in organizing policy discussions and provided expert guidance in developing need based training programmes. His enthusiasm in staff development and creating aesthetic and artistic environment endeared him close to all the employees. Dr R.K. Samanta,

Joint Director (Training) took over the charge as Acting Director. The faculty and the staff bid farewell to Dr B.N. Mathur on February 10, 2004.

Obituary



We record, with profound grief, the demise of Shri S.K. Peera, T- 4 (Driver), who passed away on May 29, 2003. He is survived by his wife and a son. He served this Academy from October 1979 to till the date of his death. Shri Peera's death was a great loss to the Academy but his memory will always be treasured by all those who had the privilege of knowing his sunny disposition, his fine mind, and his affectionate heart.