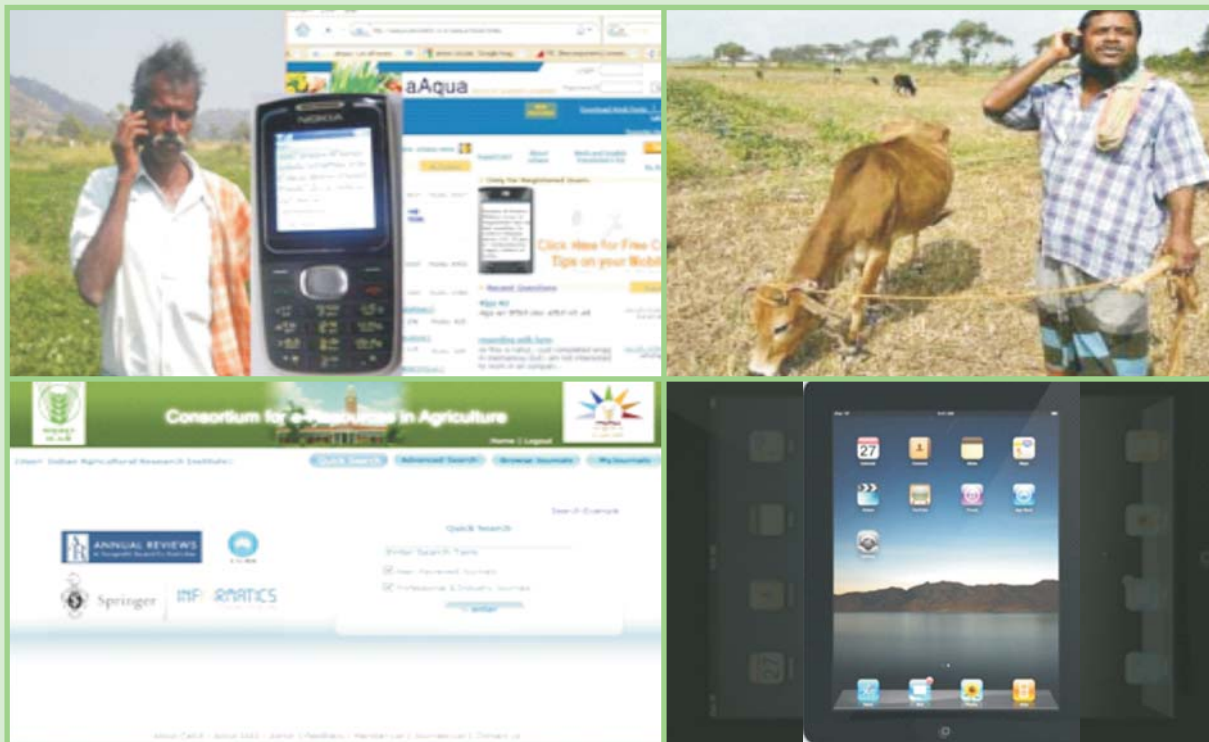


Annual Progress Report 2009-10

COMPONENT 1



May 2010



Project Implementation Unit
National Agricultural Innovation Project
Indian Council of Agricultural Research
Krishi Anusandhan Bhawan II
Pusa Campus, New Delhi



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Foreword

Realization of complexities affecting sustainable food production about a decade back, started attracting attention towards profitability, rural employment, poverty alleviation, marketing, policy issues etc. Research and research investment were not considered continuing linear relationship with enhanced production. It is with this realization at global level that brought into focus the agricultural innovations aiming to achieve same goals that were being achieved till end of 20th century. In India National Agricultural Innovation Project is one such largest national initiative of ICAR in collaboration with the World Bank. Key objective of this project is “to contribute to the sustainable transformation of Indian agricultural sector from primarily a food self-sufficiency to more of a market orientation in support of poverty alleviation and income generation”. This is to be achieved through collaborative development and application of agricultural innovations by all stakeholders. The project sanctioned on April 8, 2006 became effective on September 18, 2006. Phase I of the project is over on March 31, 2010 and we are in Phase II of project implementation.

The project is addressing its objective through four components. These are (1) ICAR as the catalyzing agent for management of change in the Indian NARS. (2) Research on production to consumption systems (Value Chains), (3) Research on sustainable rural livelihood security, (4) Basic and strategic research in frontier areas of agricultural sciences. The objective of component-1 is to improve the system-wide efficiency, effectiveness and productivity in the NARS.

Good results have started emerging from sub-projects sanctioned under this component. Efforts of Dr N.T. Yaduraju, National Coordinator (Component-1) for coordinating, monitoring and guidance to CPIs and CCPIs in project implementation are praiseworthy. Administrative and financial support provided by Shri Kumar Rajesh, Under Secretary and his team and Shri Devendra Kumar, Director (Finance) and his team are appreciable. Keen interest, guidance, monitoring and direction of Dr S. Ayyappan, Secretary DARE and D.G. ICAR, Chairman, PMC and NSC deserve special acknowledgement and thanks.

May 2010



(Bangali Baboo)
National Director

Preface

The overall objective of the Component-1 of the NAIP is to build critical capacity for providing support to other Components of the NAIP, in particular and to strengthen the NARS, in general. However, the specific objectives are: (i) to strengthen the information, communication and dissemination systems for a wider dialogue and interaction within the system and among the stakeholders; (ii) to enhance public awareness, governance, knowledge-sharing and hi-tech adoption; (iii) to formulate business policy, plan and develop models for technology commercialization and establish technology incubators; (iv) to assess the current L&CB initiatives and suggest changes in HRD and learning models like e-learning, distance learning, new experimental farms/clinics, course curricula for the future needs, etc.; (v) to assess human resource requirements for agriculture and the training needs (both domestic and foreign) by the sectors/themes with details of why, where, which areas, durations, etc.; (vi) to develop agricultural and research policy and gender analysis capacity, visioning skills with capability to use market intelligence for agri-business planning and forecasting of technology needs; (vii) to evaluate the current M&E and impact assessment mechanism and system and suggest improvements therein; (viii) to assess the roles and interface of state and central governance systems in agricultural research and suggest appropriate modalities for interfacing and policy measures to foster an effective research system in the NARS; and (ix) to remodel the financial and procurement systems as a part of the total MIS for image building of the ICAR as a dynamic and performing organization.

I am happy to present the Annual Progress Report of the Component-1 for the Year 2009–10 on the progress of implementation and highlights of the achievements done so far under this component.

The continued guidance and support extended by Dr Bangali Baboo, National Director, NAIP is gratefully acknowledged. The support and cooperation received from Mr Devendra Kumar, Director Finance and Mr Kumar Rajesh, Under Secretary (Procurement) for streamlining of financial, procurement and other fiduciary related aspects is appreciated. Timely guidance and direction of Dr S. Ayyappan, Secretary DARE and Director General, ICAR deserve special acknowledgement and thanks.

I would like to thank all the Consortia Principal Investigators and their partners along with their host organizations in implementing this unique project.

The guidance and support received from Dr. Paul S. Sidhu, Task Team Leader and his colleagues at the World Bank is greatly appreciated.

It is my earnest hope that the time lag of 16 months in implementation of this project will soon get bridged as the project implementation is being fast tracked.

I appreciate the efforts done by M/s Consulting Engineering Services, M&E Consultants in preparing this report.



(N.T. Yaduraju)
National Coordinator

Contents

<i>Abbreviations</i>	ix
<i>Executive summary</i>	xi
1 Introduction	1
1.1 Overall Project Objective of NAIP	2
1.2 Objectives of Component 1: ICAR as the Catalyzing Agent for the Management of Change in the Indian NARS	2
1.3 Budget Allocation – Planned and Actual	3
1.4 M & E System at Consortia level	4
2 Sub-projects-wise Research Progress	6

Abbreviations

BDUs	Business Development Units
CeRA	Consortium for e-Resources in Agriculture
CGIAR	Consultative Group of International Agricultural Research
CICR	Central Institute for Cotton Research
CIFT	Central Institute for Fisheries Technology
CIMMYT	International Maize & Wheat Improvement Centre
CIRCOT	Central Institute for Research on Cotton Technology
CL	Consortia Leaders
CMFRI	Central Marine Fisheries Research Institute
CPCRI	Central Plantation Crops Research Institute
CPI	Consortia Principal Investigators
CSIR	Council of Scientific and Industrial Research
DARE	Department of Agricultural Research and Education
DDSIAR	Digital Dissemination System for Indian Agricultural Research
DEA	Department of External Affairs
DECIDE	Digitally Enabled Customization of Information for Decision and Empowerment
DMAT	Digital Multimedia for Agri-Innovation Transfer
DSS	Decision Support System
DU	Deemed University
FMS	Financial Management System
IASRI	Indian Agricultural Statistical Research Institute
ICAR	Indian Council of Agricultural Research
ICRISAT	International Crop Research Institute for Semi Arid Tropics
ICT	Information and Communication Technology
IGIDR	Indira Gandhi Institute of Development Research
IIM	Indian Institute of Management
IIML	Indian Institute of Management, Lucknow
IIT	Indian Institute of Technology
ILRI	International Livestock Research Institute
IPR	Intellectual Property Right
IRRI	International Rice Research Institute
IWMI	International Water Management Institute
L&CB	Learning and Capacity Building
M&E	Monitoring & Evaluation
MTR	Mid-term Review Report
NAARM	Natioanal Academy of Agricultural Management

NAIP	National Agricultural Innovation Project
NARS	National Agricultural Research System
NDDB	National Dairy Development Board
NGOs	Non-Government Organisations
NIRD	National Institute of Rural Development
NSC	National Steering Committee
O&MAG	Organization & Management Advisory Group
O&MPC	Organization and Management Programme Committee
OA	Open Access
OCLC	Online Computer Library Centre
PAD	Project Appraisal Document
PIP	Project Implementation Plan
PIU	Project Implementation Unit
PMC	Project Management Committee
PMTS	Project Monitoring and Tracking System
PWC	Price Waterhouse and Coopers
R&D	Research and Development
RFP	Request for Proposal
RFPS	Remodelling Financial and Procurement System
RKMP	Rice Knowledge Management Portal
RPC	Research Programme Committee
SAUs	State Agricultural Universities
SMD	Subject Matter Division
TAG	Technical Advisory Group
TOR	Terms of Reference
TQM	Total Quality Management
TTC	Technology Transfer Clubs
WASSAN	Watershed Support Services & Activities Network
WB	World Bank
WEKA	Waikato Environment for Knowledge Analysis
WYC	Western Yamuna Canal

Executive Summary

Component 1: ICAR as the Catalyzing Agent for the Management of Change in the Indian NARS

This annual report (April 2009 to March 2010) presents the salient achievements of sub projects of component 1. The objective of the component 1 is to create an enabling environment for the management of change in the Indian Agriculture Innovation System. Component 1 is expected to create appropriate policy and institutional environment, incentives, skills and work culture to optimize benefits from the projects under Components 2, 3 and 4 as well as from the NARS. Support for the NARS will be in terms of (a) information, communication and dissemination systems, (b) competitive business policy and technology commercialization models, (c) advanced learning and state-of-the art capacity building initiatives, (d) value added market intelligence services, (e) good M&E and friendly financial management and procurement systems, (f) project friendly financial management and procurement systems, and (g) well-defined roles for and interfaces between the state and central R&D systems. All the projects under Component-1 are implemented in sponsored mode. A total of 40 projects (7 in 2007–08, 9 in 2008–09 and 24 in 2009–10) have so far been approved.

Sub-component 1.1: Information, Communication and Dissemination System (ICDS) Development of Central data Center and Secured Intranet

Under the Sub-component ICDS, a total of 19 projects have been sanctioned, 5 each in 2007–08 and 2008–09 and 9 in 2009–10. Six e-learning projects aimed at developing e-courses for degree programs in Agriculture, Veterinary and Animal Husbandry, Fisheries, Horticulture, Home Science and Dairy Technology are at various stages of progress. Four of these have been reviewed by the PMAC. The PMAC has suggested that each course be co-developed by more teachers and a few fully developed modules should be shared with other institutions for feedback and refinement. Some of the challenges which these projects are facing include motivating and involving all teachers, computer literacy and capacity building of teachers.

A consultancy project on setting up Central Data Center and secured intranet was awarded to ERNET India in February 2008. The project could not make good progress due to a variety of factors. As per new timelines, the Data centre would be commissioned by October 2010. A consultancy has been proposed for developing a knowledge management framework. This is aimed at developing a design defining the role of the proposed Central Data Centre. The need assessment of the system and integration of the ICT projects operating under ICDS sub component of component-1 would be taken into consideration under this Consultancy.

Under e-theses repository, more than 6,000 theses have been digitized and full text data uploaded (<http://www.hau.ernet.in>). The database access (password based) has been provided

to all stakeholders. Due to slow initial progress, the PMAC has recommended for extension of the project by 4 more months. The 'Agropedia' has diversified with many discussions online and is evincing increased interest with over 30,000 people from 165 countries visiting the site (www.agropedia.net) during the period. aAQUA SMS and voice services are reaching over 10,000 farmers regularly. Capacity strengthening of NARS partners is continuing. O&MPC has approved extension to IT partners in the consortium until March 2010 (without additional budget) to concentrate exclusively on capacity building. The uniformity guidelines for websites of ICAR institutes developed and disseminated. The template for ICAR website developed, finalized and launched. The procurement of consultancy for development of ICAR portal is at final stage. Consortium for e-Resources in Agriculture (CeRA) continues to attract more users with cumulative hits on their website (www.cera.jccc.in) crossing the one million mark and 3.6 lakh downloads. With additional budget approved by the PMC, the consortium is now providing access to additional 930 journals from four new publishers. The other projects which have been approved recently include, Development of rice knowledge management portal, Strengthening statistical computing for NARS, Mobilizing mass media support for sharing information, Strengthening digital library (e-granth), DSS for enhancing productivity in irrigated saline environment using remote sensing, modeling and GIS. There was slight delay in providing funds to these projects. However, the launch workshops have been held, recruitment of staff is complete and process for procurement of equipment is in full swing and would be completed in many cases before end of December 2010.

Sub-Component 1.2: Business Planning and Development

Five BPD projects have been approved, one each at the Zonal Technology Management Center (ZTMC) of the ICAR. Two of them (IARI, New Delhi & CIRCOT, Mumbai) have made considerable progress. The other three projects (CIFT, IVRI and NIRJAFT) are picking up. The approval of projects at these three places was delayed due to site visits by the Committee and partly due to lack of response from host institutes. Now, they are all geared up to implement the project with all seriousness. Five more BPD projects have recently been approved for SAUs. Recently approved project, Agriculture Business Incubator (ABI) of ICRISAT, would be helping all the 10 BPD projects in implementing the programs successfully.

Sub-Component 1.3: Learning and Capacity Building

National Academy of Agricultural Research Management (NAARM) in association with other partners organized 11 MDP workshops/training programmes involving nearly 200 participants. Realizing the dire need, the O&MPC has approved capacity building of teachers involved in teaching at the Agribusiness colleges of SAUs (100 nos.) by IIM-Lucknow. During the period under report, 24 scientists have been deputed for international training taking the total figure to 86 scientists.

Sub-Component 1.4: Policy and Gender Analysis, and Visioning

The sub-project, Visioning, Policy Analysis and Gender (V-PAGe) has been progressing satisfactorily with adequate attention to gender issues. The Directorate of Research Women in

Agriculture (DRWA) has initiated a number of studies related to gender. In coordination with coordinator, IFAD facility grant, DRWA is addressing issues and capacity building in four projects of Component-3 (SRLS) NAIP. The PME cells at 15 locations have become functional. In addition to studies related to research impacts, efforts are being made to mainstream PME cells with the PME activities of the Institutes. Unfortunately the project is facing leadership crisis with both the CPI and the CL at NCAP deserting the project.

The other projects, Assessment of impact of climate change on water energy nexus, Development of DSS for market outlook, Human capital requirement in agriculture, Establishing and networking of market intelligence centers and enabling small stakeholders to improve their livelihood and benefits from carbon finance are under initial stages of implementation. There was slight delay in providing funds to these projects, but launch workshops have been held, recruitment of staff is complete and processes for procurement of equipments is in full swing and would be completed in many cases before end of December 2010.

Sub-Component 1.5: Remodeling Financial and Procurement System

As per the observations of the 5th ISM, all the activities related to financial management like developing FMS, rolling out of FMS in the ICAR, and developing and rolling out of MIS for the ICAR etc, have been brought under one platform and will be implemented in project mode. A project “Financial Management System (FMS)/ Management Information System (MIS) for ICAR” has been approved recently with a budget allocation of ₹ 32.50 million.

A consultancy has been proposed for developing a knowledge management framework. This is aimed at developing a design defining the role of the proposed Central Data Centre. The need assessment of the system and integration of the ICT projects operating under ICDS sub component of component-1 would be taken into consideration.

Overall Performance Indicators

Overall performance indicators of the component are given in the following table:

The performance indicators are satisfactory and it is expected that all the PAD targets would be achieved. It has however been observed that reporting of data on number of Mass communication campaigns has not been correctly reflected. Even minor reporting in print media has been taken as a campaign therefore the number appears to be very large. Also the data on procurement has been reported by a few sub projects; therefore the reporting is incomplete.

EXECUTIVE SUMMARY

Performance indicators under Component 1 for the period till 31st March, 2010

Sub-Component	Indicator	Baseline Value	Performance as on March 2010	Target by the end of the Project (as per PAD)
1.1	No. of mass communication campaigns launched by media types	0	189	17
1.1	Increase in number of linkages formed with KVKs and CICs	1,000	1,044*	1,500
1.1	Number of hits on the subproject websites per month	50,000	1,18,082*	3,80,000
1.1	Increase in number of queries responded to from public and private organizations, NGOs per month	1,000	28,428	1,750
1.2	No. of BPD formed	0	10	5
1.3	Total Number of applications filed for patents and licensed	15	32 technology commercialized, 19 license filed	95
1.4	Annual no. of people attending visioning and policy analysis events organized through or in association with NAIP	0	872	2,850
1.5	No. of weeks for the procurement cycle of high thresholds goods	50 wks	In progress	30
1.6	Share of ICAR finance managers that uses the new FMS	0	6 institutes	97 institutes

*This does not include hits/ increase in number of linkages formed with KVKs and CICs by other component users.

CHAPTER 1

Introduction

Indian agriculture is faced with multiple challenges. It has to ensure sustained food security to ever growing population at one hand and also to enable our farmers and the agro industries to become strong enough for facing the global competition. The National agriculture research system (NARS) therefore must be reoriented and restructured in such a way that it is compatible to meet the challenges ahead. Naturally it calls for strategic modifications in the academic and research sectors which should be capable of addressing broader horizon of all the components in Higher education and research in agriculture and allied science and be internationally compatible in all the related aspects.

Therefore innovations to manage changes in the NARS have to be developed at accelerated rates to attain the broad objectives of higher and sustainable agricultural development, matching to the needs and aspirations of our people. In this context of change, the new system has to be dynamic, motivated, creative, vibrant and flexible but accountable and driven by a learning organization. It is necessary to design programmes, relevant to achieving increased crop productivity, global competitiveness in cost and quality, poverty alleviation, and nutritional, livelihood and income security. It is important to work with participatory mode of development, management and execution both within and outside the organization involving the whole range of stakeholders. The system's capacity for information and knowledge management, communication and visibility has to be robust, vast and innovative through the "Partners in Progress" mode. The agricultural R&D system should integrate farmers, agricultural researchers, educators, extension officers, traders and consumers to harness knowledge and information from various sources. The key features for such a system include pluralism, partnerships, decentralization, accountability, priority-setting, aligning R&D to market trends, sustainable financing, etc.

To strengthen these abilities/ features in the system, the new National Agricultural Innovation Project (NAIP) has been planned by ICAR with four Components. Component 1 will create appropriate policy and institutional environment, incentives, skills and work culture to optimize benefits from the projects under Components 2, 3 and 4 as well as from the NARS. Support for the NARS will be in terms of (a) information, communication and dissemination systems, (b) competitive business policy and technology commercialization models, (c) advanced learning and state-of-the-art capacity building initiatives, (d) value added market intelligence services, (e) An efficient M&E and strengthened impact evaluation systems, (f) project friendly financial management and procurement systems, and (g) well-defined roles for and interfaces between the state and central R&D systems. The Component-1, has to create an environment that will be conducive to the flow of knowledge, collaborations, experimentations and implementation of innovations. The emphasis in this Component is on the SAUs, which comprise a majority of the scientists.

1.1 Overall Project Objective of NAIP

The objective of the project is to contribute to the sustainable transformation of Indian agricultural sector from production orientation to one in which market orientation is equally important for income generation and poverty alleviation. The specific objective is to accelerate the collaborative development and application of agricultural innovations between public research organizations, farmers, private sector and other stakeholders.

1.2 Objectives of Component 1: ICAR as the Catalyzing Agent for the Management of Change in the Indian NARS

Component 1 deals with strengthening of ICAR and the SAUs as catalyzing agents for the system by strengthening information, communication and dissemination capacities, business planning and development, skill development in generation and dissemination of knowledge, and capacity building models, policy analysis, long- and short-terms visioning, market intelligence analysis, and capacity development to remodel financial and procurement systems as per the requirements of smooth functioning of organization. The specific objectives are:

- (i) To strengthen the information, communication and dissemination systems for a wider dialogue and interaction within the system and among the stakeholders.
- (ii) To enhance public awareness, governance, knowledge-sharing and hi-tech adoption.
- (iii) To formulate business policy, plan and develop models for technology commercialization and establish technology incubators.
- (iv) To assess the current L&CB initiatives and suggest changes in HRD and learning models like e-learning, distance learning, new experimental farms/clinics, course curricula for the future needs, etc.
- (v) To assess human resource requirements for agriculture and the training needs (both domestic and foreign) by the sectors/themes with details of why, where, which areas, durations, etc.
- (vi) To develop agricultural and research policy and gender analysis capacity, visioning skills with capability to use market intelligence for agri-business planning and forecasting of technology needs.
- (vii) To evaluate the current M&E and impact assessment mechanisms and systems and suggest improvements therein.
- (viii) To assess the roles and interface of state and central governance systems in agricultural research and suggest appropriate modalities for interfacing and policy measures to foster an effective research system in the NARS.
- (ix) To remodel the financial and procurement systems as a part of the total MIS for image building of the ICAR as a dynamic and performing organization.

The Consortia and the sub projects

This component has five broader groups of the projects with 40 consortia participating in various sub projects along with 115 partners.

In all, following 40 projects have been approved during different years under this component at an approved budgetary allocation of ₹ 3,495.71 million.

INTRODUCTION

Number of sub-projects under 5 Sub-components of Component-1

Sub-Component	2007-08	2008-09	2009-10	Total	Approved budget (₹ million)
1.1 Information, Communication and Dissemination System (ICDS)	5	5	10	20	1,911.50
1.2 Business Planning and Development (BPD)	-	2	9	11	401.50
1.3 Learning and Capacity Building (L&CB)	1	-	-	1	552.64
1.4 Policy and Gender Analysis, and Visioning	1	2	4	7	305.05
1.5 Remodeling Financial and Procurement System (RFPS)	-	-	1	1	325.02
Total	7	9	24	40	3,495.71

1.3 Budget Allocation – Planned and Actual

All the projects under this component are sponsored and need based. A sum of ₹ 3,495.71 million has been sanctioned for this component. A summary of the total sanctioned amount and average amount sanctioned is given in the following Table.

Number of consortia and amount sanctioned for Component-1

No. of consortia	Number of participating institutes		Amount sanctioned (₹ million)	Amount Sanctioned per consortia (₹ million)
	As consortia leader	As consortia partner		
40	40	120	3,495.71*	87.39

*This does not include the sanctioned amount for PIU, CDC and IPM.

Budget Utilization

The budget utilization for the year 2009-10 and as cumulative have been shown in the following Table.

Details of sanctioned budget and Utilization

(₹ in million)

Component-1/ sub-component	Total Sanctioned budget	Budget 2009-10	Expenditure in 2009-10	Cumulative expenditure till March 2010	Cumulative expenditure to total sanctioned budget (%)
ICDS	1911.5	0.00	176.5	300.7	15.73
BPD	401.5	0.00	45.1	47.2	11.76
LCB	552.6	0.00	72.7	125.6	22.73
VPage	305.0	0.00	34.9	53.6	17.57
RFPS	325.0	0.00	0.0	0.0	0.00
PIU + 28.76 CDC + 12.15 IPM + 13.5 PIU	771.9	551.20	58.1	187.6	24.30
Total	4,267.5	551.20	387.3	714.7	167.50

The overall budget utilization is 16.75%. Since, 24 sub-projects have been awarded in 2009–10, therefore utilization of budget is slow. It will gear up in the next financial year.

1.4 M&E System at Consortia level

In this component, the committees like CAC, CICs and CMUs do not operate. The Project Monitoring and Advisory Committee (PMAC) reviewed the progress of all approved sub-projects. During the period under review 2009–10, PMAC has reviewed the following sub-projects:

Sub-projects reviewed by PMAC during 2009–10

S.No.	Name of the project	Proponents	Place of review	Date(s) of review
1.	Development of Intranet and Centralized Data-Centre	ERNET India Ltd. (consultancy project)	PIU-NAIP, New Delhi	27.02.2009
2.	Visioning, Policy Analysis and Gender (V-PAGe)	NCAP, New Delhi (CL) and 19 partners	NCAP, New Delhi NCAP, New Delhi	27/28.02.2009 30.12.2009
3.	Learning and Capacity Building	NAARM, Hyderabad (CL) and 3 partners	NAARM, Hyderabad NAARM, Hyderabad	18.03.2009 20.03.2010
4.	Re-designing the Farmer-extension-Agricultural Research/Education continuum in India with ICT-mediated knowledge management	ICRISAT, Hyderabad (CL) and 6 partners	ICRISAT, Hyderabad IIT, Kanpur	17.03.2009 30.01.2010
5.	Development of e-Courses for B.V.Sc. and A.H. degree programme	TNVASU, Chennai	TNVASU, Chennai TNVASU, Chennai	24.04.2009 20.04.2010
6.	Development of e-Courses for B.Sc. (Agriculture) degree programme	TNAU, Coimbatore	TNAU, Coimbatore TNAU, Coimbatore	25.04.2009 18.04.2010
7.	Krishi Prabha-Indian Agricultural Dissertations Repository	CCSHAU, Hisar	CCSHAU, Hisar PIU-NAIP	14.05.2009 02.03.2010
8.	Establishment of Consortium for e-Resources in Agriculture (CeRA)	IARI, New Delhi	IARI, New Delhi	15.05.2009
9.	Agroweb–Digital Dissemination System for Indian Agricultural Research (ADDSIAR)	NBPGR, New Delhi and 8 partners	NBPGR, New Delhi NARM, Hyderabad	11.08.2009 04.02.2010
10.	Development of e-Courses for B.Sc (Hort) degree programme	UHS, Bagalkot and two partners	College of Horticulture, Mudigere	18.08.2009
11.	Development of e-Courses for B.F.Sc. degree programme	KVAFSU, Mangalore	College of Fisheries, Mangalore CIFE, Mumbai	19.08.2009 08.05.2010
12.	ZTM-BPD	CIRCOT, Mumbai	CIRCOT, Mumbai	17.12.2009
13.	Establishing and Networking of Agricultural Market Intelligence Centres in India	TNAU, Coimbatore	TNAU, Coimbatore	17.04.2010
14.	E-Publishing and Knowledge System in Agricultural Research	DIPA, ICAR, New Delhi	DIPA, ICAR, New Delhi	14.12.2009
15.	e-Home Science Courseware Consortium	ANGRAU, Hyderabad and 2 partners	ANGRAU, Hyderabad	21.12.2009

(Contd...)

INTRODUCTION

(Concluded)

S.No.	Name of the project	Proponents	Place of review	Date(s) of review
16.	Development of e-Courses for B. Tech (Dairy Technology) degree programme	NDRI, Karnal and 2 partners	NDRI, Karnal	08.01.2010
17.	Developing a Decision Support System for Agricultural Commodity Market Outlook	NCAP, New Delhi and 1 partners	NCAP, New Delhi	30.12.2009
18.	Mobilizing Mass Media Support for Sharing Agro-Information	DIPA ICAR and 9 partners	IIHR, Bangalore	04.02.2010
19.	Assessment of Impact of Climate Change on Water-Energy Nexus in Agriculture under Canal Irrigation System	IIM Ahmadabad and 2 partners	PIU-NAIP, New Delhi	23.01.2010
20.	Decision Support System for Enhancing Productivity in Irrigated Saline Environment using Remote Sensing, Modelling and GIS	CSSRI, Karnal and 2 partners	CSSRI, Karnal	12.03.2010
21.	Strengthening of Digital Library and Information Management under NARS (e-GRANTH)	IARI, New Delhi and 8 partners	IARI, New Delhi	24.04.2010
22.	ZMT-BPD CIFT, Cochin	CIFT, Cochin	CIFT, Cochin	19.04.2010
23.	Development and Maintenance of Rice Knowledge Management Portal	DRR, Hyderabad and 8 partners	DDR, Hyderabad	20.03.2010
24.	BPD unit at NIRJAFT, Kolkata	NIRJAFT	NIRJAFT, Kolkatta	15.05.2010

CHAPTER 2

Sub-projects-wise Research Progress

ICAR as the catalyzing agent for management of change in the Indian NARS

The objective of the component 1 is to create an enabling environment for the management of change in the Indian Agriculture Innovation System. Component 1 will create appropriate policy and institutional environment, incentives, skills and work culture to optimize benefits from the projects under Components 2, 3 and 4 as well as from the NARS. Support for the NARS will be in terms of (a) information, communication and dissemination systems, (b) competitive business policy and technology commercialization models, (c) advanced learning and state-of-the art capacity building initiatives, (d) value added market intelligence services, (e) good M&E and friendly financial management and procurement systems, (f) project friendly financial management and procurement systems, and (g) well-defined roles for and interfaces between the state and central R&D systems.

The component is implemented through five sub-components and the sub-component-wise progress made is reported below.

Sub-component 1.1: Information Communication and Dissemination system (ICDS)

The main emphasis has been to strengthen the ICT infrastructure and its application. The activities include setting up a Central Data Centre, developing e-learning modules, creation of digitized content and knowledge management, formation of e-journal consortium, building agricultural portal, digitization of PhD theses and historical publications, developing formal linkages between NARS libraries and international libraries, developing institutional repositories and creating an open access to Indian publications etc. The whole idea is to harness the power of ICT in improving the quality of research, education, training and technology transfer activities of NARS. The infrastructure that is being created, the critical mass that has been trained and the knowledge products/resources that are being developed, will make the system very strong and will have tremendous impact on the growth in agriculture. To give push to the ICT initiatives of the NAIP, special presentations on Agropedia and Open Access were arranged at the Inter-phase Meeting of the Directors of ICAR Institutes and the Vice Chancellors of the SAUs held on 17th February, 2010. At a workshop held on 19th March, 2010, the scientist-in-charge of all the Agricultural Research Information Service (ARIS) Cell of the ICAR were sensitized about the ICT initiatives of the NAIP with particular reference to the Agroweb project. These steps would help in better use/adoption of relevant ICT initiatives in the system.

Twenty sub-projects have been sanctioned at a total budget of ₹ 1,911.5 million. Looking at the potential of computational biology and genomics and the leadership role that India can play in this field at the global level, it was decided to establish a National Agricultural Bioinformatics Grid (NABG) at a cost of ₹ 586.6 million.

Central Data Centre

A Central Data Centre is proposed to be set up to establish a secure intranet for NARS covering the 273 centers where internet connectivity was provided under the NATP. The Data Centre, would provide a scalable, secure and reliable infrastructure for hosting and managing e-governance through web-enabled applications, services, messaging, databases, ERP, DSS, content managing system etc developed by ICAR/institutes/SAUs. Through data centre, it would be possible to deliver information and inline services to researchers, teachers, students, farmers through internet/intranet. As the data center would provide managed services, individual ICAR institutes can focus more on the development of services, application, etc. instead of the issues surrounding the infrastructure. The delay in commissioning the Centre was discussed at great length during the sixth ISM (December, 2009). There was lack of clarity with regard to bid document format and guidelines. The issues have been sorted out and the Bank has asked the ERNET India, the consultants implementing the Data centre to submit the documents officially through the PIU-NAIP. The procurement process will soon be initiated and the data center is expected to be commissioned by May 2011.

Development of e-courses

Shortage of teachers and absence of quality learning material are hurting the education system in the country. The competence of our graduates can be improved tremendously by providing them with quality learning material innovatively developed using the latest tools in ICT by the best teachers in the country and made available both off line and online. With this background, e-courses are being developed for degree programs in Agriculture, Veterinary Sciences & Animal Husbandry, Horticulture, Fisheries, Home Science and Dairy Technology. The courses being developed are as per syllabus recommended by the 4th Dean's Committee. The effort is to complement the formal education and does not attempt to give degrees through distance education.

Thirteen e-learning laboratories have been set up, each adequately equipped with required hardware, software, and other gadgets such as video cameras, scanners, video editing workstations with software, CD/DVD mass duplicator etc. Capacity building has been one of the main activity in these projects. A number of trainings/workshops have been organized within and outside the consortia to equip teachers, contractual personnel and students involved in content development, multimedia development, web designing and other related fields. All teachers, students and contractual staff who are involved in the projects have been trained in content development, multimedia and related fields at NAARM, ICRISAT and IIT-M. Fourteen teachers have also undergone international training.

Development of e-courses is very challenging assignment requiring more time, budget and IT preparedness of the teachers and the organizations. Despite these, the PMAC during its reviews have acknowledged the stupendous efforts by all the consortia in making good progress with respect to content development and their approach to develop e-courses. The progress in all projects is not uniform as they were initiated at different times. In BSc (Agri), all 50 courses have been completed including streaming video lectures with presentations. Besides, learning objects repository on numerous topics like crop science technology, farm

machinery, press clippings, emerging technologies with 30,000 text files, 5,000 images, 1,000 audio/video clippings, 120 hours of guest lectures and 19 hours of case studies, manuals for practical classes for 40 courses and question bank of 5,500 questions have been created. The material has been hosted on the local server and CDs/DVDs have been prepared and distributed to the students at the TNAU. The CDs have also been sent to peer reviewers for comments and feedback. As the material in this case is developed by a single institution, the PMAC has recommended for a thorough review by an independent committee of experts before it is approved for further dissemination and use by all the SAUs.

In BVSc project, 10 courses have been developed fully, while the progress is about 80% in 45 courses, around 60% in 10 and around 40% in 3 courses, out of the total of 68 courses. More than 2,000 visuals/animations/videos have been created. In BFSc, the content creation is complete for 56 courses and multimedia content development for two courses has been completed. In Home Science, content development is complete for 30 courses and the progress in remaining courses is at various stages. In Dairy Technology, the development is complete in 9 courses and the progress in remaining courses is at various stages of development. In Horticulture, out of the 52 courses, the progress in 21 is 80%, 50-80% in 17 and less than 50% in 13 courses. Trained manpower and the infrastructure created will be available for sustaining this exercise, which is of continuous nature.

As observed by the Bank during its sixth ISM, the external review and the quality assurance aspects have been taken into consideration. It has been decided by the PMAC that more teachers are being involved in development of the courses and the final validation will be done through an independent committee.

Krishiprabha

Digitization of full text of over 6,000 Doctoral Dissertations submitted to all the State/Deemed Agricultural Universities during 2000–07 has been completed, work with another 500 plus theses would be completed within the next 6 months. Software customized (e-Quest) with a search engine for locating theses through title, student name, supervisor name, year of submission, discipline and a set of keywords. Three workshop/trainings were organized and trained more than 70 Librarians from NARS. A user manual for KrishiPrabha Database was developed and disseminated to all the libraries on CDs as well as through email. Standard format for submission of softcopies of Dissertations was developed and disseminated. Developed template for submission of e-theses from remote locations. Data export facility created. Data can be imported to any standard format after exporting it to MS-Excel which is a standard software.

Free online access to the database has been given to the users to all libraries through Internet (IP address-based as well as Password-based), of which the IP addresses of 105 have already been activated. The non-members could access only the metadata and abstracts. Over 20,000 hits and 6,500 downloads have been recorded on the website so far. One of the major impacts of the project has been the interest shown by the Google, who propose to index the contents of KrishiPrabha database in Google Scholar. The effort made will be immense use to the scientific community, as it would enable better research, avoid duplication and plagiarism.

Consortium for e-resources in Agriculture (CeRA)

At a time when the resources particularly at the SAUs for the subscription of costly international journals and resources were dwindling drastically, consortium for e-resources in agriculture has come as a big boon. The Consortium for e-Resources in Agriculture (CeRA at www.cera.jccc.in) established in November 2007 is providing online access to over 2000 international journals, some with high impact value to students and research workers through 124 NARS libraries. Besides, publications from Springer Verlag, Annual Reviews, CSIRO and Informatics, select journals from five new publishers—Elsevier, Taylor & Francis, Nature, Indian Journals.com and Thomson Reuters (for SCI) have been added in 2009. Forty awareness-cum-training workshops were held throughout the country involving over 2000 scientists to educate faculty and students on CeRA usage and capability. This has triggered the much needed change and more and more scientists are updating their knowledge through CeRA. Studies on the scientific impact of the facility are under progress.

Due to this innovative idea of forming the consortium, better bargaining for the price was possible. Assuming a conservative 90% discount over the list price offered to the consortium, the system is saving around ₹ 600 million annually. It would cost 8 to 9 times higher cost, if one were to go for all journals in individual libraries. Further, the database created of print subscriptions in NARS libraries is enabling libraries to share resources. Until the period ending December 2009, over 650,000 articles have been downloaded from CeRA subscribed publishers indicating the tremendous response from scientists/teachers in NARS. Assuming a cost of USD 2 per article, the consortium has already recovered ₹ 58.5 million, against an expenditure of ₹ 95 million made so far.

Knowledge management

There is expectation that ICT tools and platforms will enable wider reach of expertise among the farmers and community-based organizations. Such expectation requires building of online services that various stakeholders in the research/education-extension-farmer continuum can contribute to or make use of in support of important decisions in production and marketing. Building and sustaining such services requires a vast aggregation of validated documents (including images, audio/video clips and animations) besides dynamic data such as weather, markets and on important events. This core content and data organization is missing in many parts of the world and a model is being developed on this Consortium. Once developed, the platforms and tools built can be rapidly adapted for use in support of research and education as well. The Agropedia platform designed and tested on this Consortium, along with the combination of web-mobile-voice telephony to reach the farmers and to collect their feedback and web GIS products has demonstrated how agricultural scientists and ICT specialist can jointly build a variety of relevant products. The Agropedia platform has been adapted to release a new product called Open Agri which enables institutions and researchers to share their research papers directly along the well-established route of Open Access. Its adaptation in support of learning is being attempted. These platforms are built with some of the most advanced web technologies and this is the first time globally that these have been applied to agricultural sciences.

A major outcome is that experts in DOR-ICAR have, on their own, contributed an intricate knowledge model for safflower crop even though this institution is not a formal partner of the Consortium. The Adarsha Mahila Samaikhya, a federation of all-women self-help groups operating from Mahbub Nagar district in AP, has actively participated in making use of GIS-derived micro-level drought vulnerability maps which have been developed for the first time on such a scale globally.

The IIT-Kanpur has developed a series of hand-held devices built on the popular iPhone and the Wikireader, packing the entire Agropedia (about 5000 web pages). The IIT-B team has built an off-line device for aAQUA that allows a KVK to access this query-response forum even without Internet connectivity. Trials to add SMS functionality into Agropedia have been successfully demonstrating that a field worker can access expert-validated information using a hand-held and can send alerts to select client farmers directly making use of such content. A model that brings together SAU-ICAR institutions, other experts in agriculture, outreach agencies and processes, advanced information and communication technologies and cell phone service providers has been developed and demonstrated. The Government of Karnataka has incorporated the Open Web GIS approach developed on this consortium into its “Bhoomi” project covering 20 districts. Ongoing impact studies indicate that a blend of web technologies (for experts and specialists) and SMS/voice browsing technologies with mobile phones (for farmers) and emerging hand held devices (for field workers) will be required in the near future. Innovations developed here are now part of the NAIP projects for Rice KM and in Open Learning for horticultural development. The IIT-Kanpur has built an advanced online open access repository for research publications for ICAR-SAU institutions with state-of-the-art techniques (Agro Tags) and has formally offered the platform through the ICAR to the NARS community in India. Thus, sustainable linkages between the NARS and ICT advanced institutions in India have been forged.

As suggested in the last *Aide memoire*, the IIT-Kanpur has been given an extension up to June, 2010 during which they would come with the proposal for second phase of work on Agropedia.

AGROWEB

The websites are the windows to the outside world. However, the websites of many ICAR institutes were rather unimpressive, not uniform and lacked dynamism and vibrancy. NAIP has tried to address this issue by piloting this project in 10 institutes. The project developed the Standards and Uniformity Guidelines which has been widely circulated amongst ICAR Institutes and some have started adopting the recommendations to improve their websites. Content management system platform using open source software has been finalized and recommended for implementation. Ten partner institutes have adopted the templates for their websites. 25 other Institutes are working on the websites using the content management system.

The consortium has developed many online databases, the important ones being: Online application for generating Hall-tickets for SRF exam, Online updating of scientist’s profile, Online PDF Search, Online training management module, On-line Intellectual Property Right (IPR) Information System, On-line submission of applications for import of germplasm, ICAR

Plant Variety Registration System. Databases on Tissue Culture, Germplasm Quarantine and Exchange, crop production, area statistics, Horticultural crop database, databases on insect pests, diseases, weeds of important crops, Aquaculture production and export scenario, Web-enabled Information System on Availability and Sources of Superior Germplasm of Cattle and Buffaloes, Web-enabled Information System on National Collection of Dairy Cultures and Web-based Decision Support System for Livestock Farm Management have also been developed. Seventy seven participants from ICAR institutions have been trained who would ensure sustainability of the interventions. A workshop was held in April, 2010 involving all the ARIS Cells of the ICAR Institutes to create awareness about the ICT initiatives of the NAIP with particular reference to the Agoweb project. The consultancy for building of ICAR Portal has been cleared by the World Bank and the work has been contracted to Tata Consultancy Services (TCS) in March, 2010. The portal would be ready by September 2010. With this in background the project has been given extension by nine months (will end now on December, 2010).

Rice Knowledge Management Portal (RKMP)

Building a platform wherein all the stakeholders of a particular crop or a commodity could join, interact and share knowledge, often on a real time basis is a challenging job. But such platforms are going to be the requirements in the future as it would be very difficult to filter out the needed information quickly in the internet. As a pilot such an exercise is being attempted by developing the rice portal. Rice is an important crop cultivated often by resource poor farmers. It would directly benefit 15 major rice growing states of the country.

Besides the launch workshop, four awareness workshops were organized to generate awareness about RKMP. Bench mark survey has been conducted on critical analysis of existing information and knowledge flows, geometrics of knowledge flows, bench marking knowledge, service quality of existing systems, knowledge needs at organizational and individual levels. A design feature workshop was conducted to finalize design features and functional requirements of the portal, and finally four navigational schemes and key features are worked out. Content development workshop was organized to chalk out strategies for developing the content from 15 states of the country. A comprehensive information architecture was developed. Content development workshops were organized for six states. A web based MIS of AICRIP has been developed and is under refinement. Twenty one approach papers discipline-wise and 22 status papers—state wise are being written by the eminent rice scientists. FAQs have been collected from six states of RKMP partners. Rice Wikipedia is being developed as a part of Agropedia work of ICRISAT. A social network site www.drrrkmp.ning.com has been created. A project website is also developed and hosted at www.drricar.org/rkmp. The prototype e-learning platforms using moodle and joomla are ready. This interactive and dynamic portal would be owned by the DRR, Hyderabad through AICRP.

DSS for Enhancing Productivity in Irrigated Saline Environment using Remote Sensing, Modeling and GIS

Decision support systems (DSS) using remote sensing, modeling will be developed for enhancing the productivity of saline soils. Geoinformatics facilities at CSSRI, Karnal, IARI, New Delhi, and NIH, Roorkee have been developed with state-of-the-art technology. An irri-agro informatics database of the Western Yamuna Canal (WYC) command has been created which has been used for identification and delineation of areas of low productivity in the command. A DSS framework has been developed for integrating databases, models, GIS and query interface. Ninety four stakeholders from four districts were sensitized to the prevalent problems and their solutions under uncertain canal water supply, ongoing secondary soil salinization and waterlogging.

e-Granth

Through this project, it has been proposed to achieve the twin objectives of greater access and sharing of international literature and enhanced visibility. The Indian collections would be merged with the Worldcat to develop the Union Catalogue. The library personnel were sensitized through workshops/trainings (one involving the Online Computer Library Centre (OCLC) experts from the USA through Webinar). So far, 5,000 records have been catalogued through Connexion software. OCLC membership and project IDs for Batch uploading of existing cataloged data to OCLC obtained and 303,394 records have been uploaded for processing. The documents/records to be digitized have been identified to develop Institutional repositories. The Council has taken a policy decision to adopt Open Access in the ICAR and two of its publications have been put on OA mode. These efforts will greatly enrich the library resources available for use by the students and research scientists in the NARS and will impact their capabilities.

Mobilizing Mass media support for sharing Agro-Information

To enhance the dialogue and interaction with the public at large and the farming community, it has been proposed to engage with the media in a big way. Under this project, nine media cells have been set up in different parts of the country, each provided with a contractual staff specialized in agri-journalism/mass communication. In all nine media meets and 3 exhibition/programmes were organized and a total of 516 news releases were made to highlight the technologies developed by the ICAR/SAUs. Five films were made on success stories of farmers and 83 scientists have been trained in media related activities. With the trained manpower, it is expected that the partner institutes will imbibe the skills and capacity required for exploiting the mass media.

Strengthening statistical computation in NARS

Access to modern and sophisticated computing systems will empower the scientists for better analysis and interpretation of the data and will entail its publication in high impact journals. However, most such packages are very expensive if bought individually and will also have to incur annual charges for renewal and updating. Under this project, SAS statistical

package will be licensed at 150 NARS centres on perpetual basis. It also envisages building capacity in the system by training over 1,900 personnel in advanced statistical computing facilities.

All 150 NARS centres have nominated the Nodal Officers and their IP addresses have been compiled. The equipments have been purchased and statistical computing labs in eight Centres have been established. The implementation of the project depends on the procurement of SAS statistical software. The efforts for procurement of the software, were initiated in July, 2009. After a couple of meetings with the Negotiation-cum-Procurement committee constituted by the ICAR, the cost of the software and the terms and conditions were finalized. Although, in-principle approval of the World Bank for procurement of the software was received in December 2009, the Bank cleared the agreement only in April 2010.

Four more projects: Development of ICT based interactive multimedia advisory system (CL-RTBI, IIT-M), Innovations in technology mediated learning (CL-IGNOU), Online system for Net/ARS prelim exam of the ASRB (CL:ASRB) and Establishment of National Bioinformatics Grid in ICAR (CL:IASRI) have recently been approved.

Sub-component 1.2: Business Planning & Development (BPD)

The ICAR and the SAUs have been involved in developing a number of technologies but they have poor capacity for their commercialization. The attitude, the mindset and the organizational culture is not congenial either for marketing the technologies, enterprise development or for developing the public-private partnership. The idea of the BPD is to encourage, nurture and support technologists and scientists with initiative and potential to turn their innovative research ideas into sound commercial ventures. It is envisioned to formulate business policy, plan and develop models for technology commercialization and establish technology incubators.

Institutional framework and policy guidelines: The ICAR has developed the *Guidelines for Intellectual Property Management and Technology/Commercialization* that has been implemented in the ICAR with effect from October, 2006. It deals extensively about policy framework for IP management and technology transfer/commercialization. Further, the ICAR has finalized a Scheme *Intellectual Property Management and Transfer/Commercialization of Agricultural Technology* which is being implemented during the XI five year plan. The objectives of the scheme are:

1. To set in place an institutional mechanism to protect/manage Intellectual Property (IP) generated within the ICAR system.
2. To implement the incentive system, incorporated in the ICAR guidelines.
3. To maximize technology transfer by ICAR institutes, and to generate income/resources through commercialization of IP.

The NAIP has committed a budget of ₹ 121.5 million to support the above schemes.

The institutional set up: A three tier institutional set up is in operation.

- The Agro-Technology Management Centre (ATMC) at ICAR HQ to perform the key role of facilitation/coordination and monitoring.
- Zonal Technology Management Centres (ZTMCs) at IVRI, Izatnagar; CIRCOT,

Mumbai; IARI, New Delhi; NIRJAFT, Kolkata and CIFT, Cochin.

- Institute Technology Management Units (ITMUs) at all the ICAR institutes.

In order to integrate and complement the above ICAR scheme, the NAIP has set up a Business Planning and Development unit in each of the ZTMC. This was done with the expectation that the BPD units supported by the NAIP would find ownership and would be sustained during post-NAIP period as well. With the provision of a management expert and proposed introduction of corporate culture, the initiative will speed up the ongoing commercialization activities of the ICAR.

Looking at the tremendous potential these units have, five more units were added later in the SAU system. A project on Hand holding and mentoring of BPDs under NARS has also been sanctioned to Agricultural Business Incubator (ABI), ICRISAT to help, support, network all BPD units. ABI-ICRISAT will also oversee implementation of the work plan and monitor their progress.

BPD units under the ICAR: All five units are operational now with all the staff including the Business managers (with MBA degree) in place. The offices have been made ready, most of the equipments are procured and other facilities are created or being created. The important activities taken up by them include:

- Each BPD has identified 5–10 technologies ready for commercialization and their market valuation is in progress.
- Advisory committees have been constituted for streamlining and monitoring the activities of the units.
- Developed the database of the potential entrepreneurs and organized entrepreneurs meets
- Market sensitization through advertisements, emails, websites, direct contact, participation in exhibitions/shows etc, distribution of brochures/fliers, etc
- Sensitized the other ICAR institutes in the catchment and compilation of their technologies.
- Enrollment of members

Five meetings with the top management of ICAR have been held so far to sort out some administrative difficulties, clear misunderstandings, and create an atmosphere for smooth implementation of the project. The ABI-ICRISAT has been proactive in supporting and guiding these BPDs.

The following technologies have been commercialized by the BPD units:

- GinERP software useful for the ginning industry (CIRCOT)
- Auto Groover machine (CIRCOT)
- Expanded the Public–Private Partnership Model for hybrid seed production of Pusa RH 10 to more seed companies. The annual earning of royalty during 2008–09 was ₹ 7.3 million. Because of this partnership in seed production the area under Pusa RH 10 has gone up to 4 lakh ha (25% of the total area under hybrid rice in India) area during *Kharif* 2009 (IARI).
- Development and Evaluation of Basmati Rice Threshing System (IARI, New Delhi)
- Development of Irrigation scheduler-Programmable systems (IARI, New Delhi)

- Plant Virus Detection Kit (IARI, New Delhi)
- Animal Feed Block Making Machine (IARI, New Delhi)
- Solar Crop Drier (TNAU, Coimbatore)
- Bt cloned gene cry2Ai (TNAU)
- Glucosamine hydrochloride production technology (CIRCOT)

Convergence with the initiatives of the ICAR: As per the directive of the top management, the activities of both the BPDs and the ZTMCs are to be integrated and put under single administration to avoid duplication and to provide synergy. The ICAR organized ZTMC-BPD zonal meetings involving all the ICAR Institutes at Delhi, Izatnagar, Cochin, Mumbai and Kolkatta and the BPD implementing Team including the Business Managers participated in all these programs. The objective of these 2-day programs was to create awareness about the IP assets of the ICAR and sensitizing the scientists about entrepreneurship and commercialization of technologies. A total of over 500 scientists representing 97 Institutes participated in these programs including many senior managers of the ICAR. In view of the potential and impact of the intervention, the DG, ICAR took two meetings in the last two months, gave direction and guidance and helped in removing bottlenecks in implementation.

BPDs under the SAUs: Five projects have been sanctioned one each at TNAU, Coimbatore, JNKVV, Jabalpur, AAU, Anand, BAU, Ranchi and CCSHAU, Hisar. Although the funds were released only in January, 2010, all have completed the recruitment of staff including the Business Managers, and procurement of equipments and works related to renovation are in progress. They have drawn up detailed work plan in consultation with the ABI-ICRISAT.

Sub-component 1.3: Learning and Capacity Building (L&CB)

The ICAR has proposed the National Agricultural Innovation Project with the explicit objective to give NARS an innovation perspective by transforming it to a pluralistic National Agricultural Innovation System (NAIS). In the NAIS, public, private and civil society organizations are expected to be involved together in well defined partnerships to pilot accelerated and sustainable transformations of Indian agriculture to meet national goals. Institutional learning and capacity building are central to achieving this transition. One project with NAARM as the CL and IIM-L, MANAGE & NIRD as Consortia Partners has been sanctioned with a budget of ₹ 552.64 million.

I. Capacity Building

A. National Training

Training needs assessment: Identified core competencies, their priorities and corresponding knowledge, skill and attitude classes for three levels of professionals in NARS—research managers, scientists and technical and administrative staff.

Enhanced capacity for innovation (Leadership, PME, PPP, Information management, Intellectual property management): Organized and designed effective course curriculum and resource materials for 74 Management Development Programmes, Training Programmes and Workshops for 1,441 participants representing ICAR, SAUs, other public sector institutions, private industry and NGOs from different parts of the country. The details are given below:

ANNUAL PROGRESS REPORT (2009–10) – COMPONENT 1

Training area/programme title	Number		Institutions	Type of programme
	Programmes	Participants		
I. Research proposal writing Developing winning research proposals (for PIs/Co-PIs for consortia projects concept notes of which were approved by NAIP)	8	199	NAARM (8)	Training
II. <i>Leadership development</i> Leadership for Innovation in Agriculture	12	218	NAARM (1) IIM L (7) MANAGE (4)	MDP
III. <i>Policy and PME</i> Policy, Prioritization, and Monitoring and Evaluation of consortia based research projects	14	268	NAARM (6) IIM L (4) NIRD (4)	MDP
IV. <i>Managing Public–Private partnerships</i> Managing public private partnerships in agricultural research	5	105	IIM L (3) NAARM (2)	MDP
V. <i>ICTs in PME</i> ICTs in PME of NAIP Projects	3	30	NAARM (2) MANAGE (1)	Training
VI. <i>IT Based decision support systems</i> Decision support systems for geospatial knowledge management for sustainable livelihoods security	2	37	NAARM (2)	Training
Data mining and GIS for decision support in agriculture	3	62	IIM L (3)	MDP
IT based decision support systems for digital content management/ multimedia development/e-learning	7	126	NAARM (7)	Training
IT based DSS for market and agri-business orientation of research and sustainable rural livelihoods	6	96	MANAGE (6)	Training
GIS for rural livelihoods assessment	2	31	NIRD (2)	Training
VII. <i>Training for Technical and administrative staff</i> Technical and administrative staff support for consortia based research in agriculture	9	152	NAARM (4) MANAGE (6)	Training
VIII. <i>Workshops</i> Training needs assessment	1	14	IIM L (1)	Workshop
Workshop on revitalizing agricultural education	1	40	NAARM (1)	Workshop
Workshop on Technology management and commercialization in agriculture	1	26	NAARM (1)	Workshop
Total	74	1,441	NAARM (34), IIM L (18) MANAGE (16), NIRD (6)	

B. Resource materials developed

Developed/updated resource materials for the following programmes:

- Policy and Prioritization, Monitoring and Evaluation (PME) Support to Consortia-based Research in Agriculture.
- Public-Private Partnerships for Innovation in Agriculture.
- Developing Winning Research Proposals in Agricultural Research.
- Technical and Administrative support for Consortia-based Research in Agriculture.
- Decision Support Systems for Geospatial Knowledge Management for Sustainable Livelihoods Security.
- IT-based Decision Support System for Digital Content Management.
- IT-based Decision Support Systems for Multimedia Content Development.
- IT-based Decision Support Systems using Video for Participatory Development.
- IT-based Decision Support system using Open Source Systems for e-learning.
- Resource materials (lecture notes) have been developed by all partner institutions for the individual programs organized by them.

C. User manuals developed

- e-Learning Management in MOODLE
- MS Access
- Arc View 3.1
- Arc GIS 9.0
- ERDAS Imagine 8.6 (for image processing)
- IDRISI (for image processing)
- GIS in watershed management
- Participatory GIS (for village geospatial knowledge management)
- GIS application in Micro level planning of Crop Livestock Systems
- NAARM Case Studies & GIS Products on GIS applications in agriculture
- Multimedia content development
- The user manuals are available in public domain on the NAARM Virtual Learning Centre on NAARM website

II. Research Studies

A. Under research, the products developed and out puts achieved are as under:

1. On-line feedback evaluation system.
2. Case studies (10): Three case studies for GI products (Navara rice, Pokkali rice and Allahabad safeda), PVP laws in Asia-Pacific region, two case studies on_value chains, two case studies on geospatial assessment of livelihoods vulnerability, PPP for livelihoods security, two case studies.
3. Websites developed: Village Knowledge Centre, web portal for SHGs in Aipur village (incollaboration with Dhan Foundation and SAIRD) and Web portal for digital media resources centre.

4. Developed 59 course e-learning modules of PG programmes in agricultural management, information management in agriculture and intellectual property management in agriculture.
5. User manuals and learning resources: for e-learning systems through Moodle (OSS), Web and Multimedia content development, GIS, Data mining, and other areas.
6. Developed databases, GIS products and vulnerability maps for assessing vulnerability of rural livelihoods at block level for Nalgonda district of AP and at district level for AP State.
7. Questionnaires/data collection instruments on organizational change—leadership, performance assessment, organizational citizenship behaviour; innovation quality.
8. Enhanced research capacity: Facilitated research proposal development for over 100 projects accepted by NAIP and provided helpdesk support to address implementation issues.
9. Enhanced capacity for market orientation of research: Capacity building and facilitation of ITMUs in institutions of ICAR, and BPD units set up under NAIP, for institutionalization of intellectual property management and technology commercialization.
10. Enhanced capacity for developing e-learning courses: Developed effective e-learning processes and models for capacity building of over 150 faculty members of SAUs and 5 DUs of ICAR in designing and implementing e-learning courses to support NAIP initiatives.

B. Publications

Book (1), papers in journals (2 submitted), several conference papers and 10 Working papers **International Training** (under approved consortia): While approving the consortia, the PMC has approved international training at advanced centres in some selected areas. The training/visits have so far been availed by **108 scientists**.

International training of NARS scientists: The trainings of 478 scientists in cutting edge areas of science identified by the PMC has been duly approved by the DARE and concurred by the World Bank and the DEA. As on April, 2010, the PIU-NAIP has facilitated the international trainings of **170 scientists**. As observed by the sixth ISM of the WB, a plan of action has been worked out to pursue the follow up action and impact assessment.

National training involving international resource persons: The PMC has also approved the training of 984 scientists in cutting edge areas of science by involving international resource persons. This is to succeed the international training (stated above) as the persons trained abroad would serve as some of the local resource persons for this national training. Further, there was lack of response and support from the SMDs in implementing this. Now the PIU-NAIP has developed the guidelines, including the financial requirement for organizing these trainings. The proposals are being invited from suitable host institutes in the country to organize these trainings. It is proposed to complete all the trainings in the next one year.

Sub-component 1.4: Policy, Gender Analysis & Visioning (PGAV)

Sustainable food security and agricultural income enhancement is critically dependant on a long-term policy framework. Through this sub-component, seven projects relating to visioning, policy analysis, gender issues, commodity outlook, market intelligence, state centre relationship etc are being implemented.

Visioning: The visioning of Rain-fed Agriculture has revealed that factors like reliability of irrigation, weather, socioeconomic profile, infrastructure, BPL families, aridity index, soil resources, etc. must be included to prioritize the needs of the region. Possible scenarios of rain-fed agriculture have been attempted and shall be shared with experts in a meeting. Visioning of dairy and hill agriculture are being done and reports will be available soon.

Technology Forecasting: Possible application of nanotechnology in agriculture is being explored. The available reviews have been digitized for easy access to NARS researchers. More than 1000 nanotech patents of soil, water, plant and animal disease diagnostics, for processing and packaging have been collated and their access supported through digital library. A workshop is proposed sometime in 2010 to draw policy implications and develop roadmap for future. 20 FOCARS trainees and 4 students from other universities have got exposure/ internship training in nano-biotechnology.

Attempt is made to document technologies in pipeline in rice production. These mainly include genetic and plant breeding efforts and possible output. Technology need for rainfed agriculture is also documented. Possibility of using GIS and remote sensing was explored in accelerating growth in agriculture.

Policy Analysis and Market Intelligence: Supply response (Nerlove's Model) for various commodities is estimated. Analysis of market integration for various commodities, projection of demand for food commodities like cereals, pulses, oilseeds, fruits and vegetables for 2020 have been done. Action research on smallholders' participation in future markets is in progress.

Changes in productivity of major crops were estimated using total factor productivity (TFP). TFP growth of wheat, maize, bajra, barley, cotton and jute has increased above 1 per cent at all-India level during 1975-2005, while negative growth observed for sugarcane, pigeon pea and gram.

Analysis of land use dynamics has revealed positive rate of change in land use under non-agricultural in all major states, except Jammu and Kashmir, Orissa and Punjab during 1951-52 to 2006-07. Negative rate of land change under agricultural sector was observed for Andhra Pradesh, Bihar, Haryana, Maharashtra, Orissa, Punjab, Tamil Nadu and West Bengal during above period.

A number of other studies like high value agriculture, empowering rural women through ICT, fish processing and marketing, and diversification of India's rural economy are other major studies in progress.

Research Impact Assessment: To develop capacity for research impact assessment and agricultural policy research both in ICAR and SAUs, three training programs were conducted involving about 100 participants. Participants were exposed to methodologies available, and illustration of case studies on various types including orientation to agricultural policy analysis. Related materials for impact assessment were distributed among participants and materials were sent to other universities on demand.

Gender Issues in Agriculture: Data on workforce participation in agriculture collected from secondary sources (Census, India) to understand the emerging scenario of gender participation in agriculture, development programmes on gender implemented by governments over years, women's participation in aquaculture development in Orissa, A checklist for gender auditing for

SRLS proposal have been developed to suggest possible gender based interventions. Training was given to 70 KVK scientists of Orissa Agricultural University, and Birsa Agricultural University to strengthen gender role in agricultural research and extension. Data related to enrolment in agriculture education and workforce in it was collected from OUAT. Results revealed increased participation of women in agriculture from 19.6% to 25.8% during 1981-2001. Apart from assessing gender role in livelihoods, the study will identify gender needs and technological, social and institutional issues, resource base of households in the regions and critical areas of skill development in the context of sustainable livelihood. Templates and tools were standardized and have been validated. The detailed work plan has been drawn up and implementation is in progress.

Centre-State System in Agriculture: Reviews of existing Acts and policies in agriculture done and options for involvement of various stakeholders like private sector, NGOs have explored. The report is under preparation.

PME Activities: Two training programs conducted to develop capacity for agricultural policy research and impact analysis. 15 PME Cells in multi-disciplinary framework mode have been in operation. In the first round, each Cell would assess the impact of three identified technology developed by the respective organization. Quite a few numbers of improved technologies have been analyzed and showed good impact. For example, Hybrid rice alone contributed 14% increase in yield, while Bt cotton technology increased yield by 26%. The reasons for non-sustainability of the PME cells are being examined and efforts are being made to integrate and institutionalize the PME activities in each organization. The PME cells have been asked to involve in M&E activities of the NAIP projects operating in their respective organizations. A workshop was held in November 2009 to sensitize agricultural economists of ICAR and SAUs for developing networks for agricultural policy analysis.

The project has been reviewed by the PMAC two times. The progress is not up to the expectations, largely due to the instability in leadership at both the consortium and institute levels (NCAP). Currently the situation appears to have been stabilized with new Director and the new CPI taking over the project. At a recent meeting (April, 2010) of ND, NAIP, Dr Mruthunjaya, former ND, NAIP with the NCAP Team, it was assured that they would revisit the work plan and take all corrective measures to improve the situation.

Establishing and Networking of Agricultural Market Intelligence Centres in India

It is a well known fact that the farmers are at the mercy of the market forces. Market intelligence and price forecasts particularly before planting of a particular crop will help in taking decisions on production and marketing including storage thus reducing or preventing distress on the part of the farmers. The consortium aims to establish 11 market intelligence centres in the country whose main objective is to develop output on commodity price forecasting for 19 major crops. The consortium led by TNAU has 10 partners. The progress made is summarized below:

- Ten marketing intelligence centers were established among the lead and consortia partners and started sharing information among them. So far 22 info series were developed and communicated to the consortia partners in addition to the sharing of traders survey reports.

- Four workshops and two trainings were conducted to improve the capacity of consortium partners and the contractual staff in the project in commodity price forecasting and dissemination.
- Forty eight commodity price forecasts were completed and published in 130 dailies, websites (www.tnagmark.tn.nic.in) and also directly communicated to 152,837 farmers through mobile voice as well as text Short Mobile Services in collaboration with IFFCO.
- Forty three Farmers trainings involving 4,150 farmers were organized to improve the capacity of farmers in use of market intelligence. Similarly twelve officers' trainings involving 600 officers of line departments were organized.
- The website is updated regularly and has received so far 57,495 visitors.

DSS for agricultural commodity and market outlook

In the globalized era the importance of the need for timely and reliable information on the likely demand, production, trade and prices of important agricultural commodities of the country needs no overemphasis. With this in view, the present project has been initiated with NCAP as the Consortium Leader and IARI as the consortium partner. The salient points of progress made by the project are summarized below:

- National Sample Survey data on household level consumption of major Commodities for the various rounds processed and used for estimating demand projections for various Commodities.
- Review of literature on global outlook model was completed and a review report on the strengths and weakness of different models was prepared.
- Status report of wheat covering the aspects of global scenario, domestic production, consumption, demand, supply management system, trade, projection on demand and supply etc was prepared.
- A framework for On-line database repository has been prepared.

The project outputs will be of immense use to the country, as it would put in place an efficient system to undertake regular monitoring and projection of the future prospects of demand, supply and prices of important agricultural commodities which will serve as a basis for informed and rational decision making.

Carbon finance

Started early this year, the consortia led by the ICRAF is aimed at helping the average farmer to get benefit from reduced carbon emissions and increased carbon sequestration by use of an alternate protocol called SMART-CDM developed by ICRAF. The protocol takes an area based (grid-based) approach which allows meeting the minimum tradable volume requirements of the carbon market. To facilitate this, the project is being implemented in four sites where Rural Livelihood projects of the NAIP are operating. Each site is also to be supported by one prominent NGO in the region. Besides launch workshop, a stakeholder's workshop on market linkage was conducted in which carbon finance market analysis was discussed and future course of actions outlined with the stakeholders, developed the criteria for grid selection, the site characterization frame work, etc.

The project proposes to build capacity in the system on various issues related to assessment of carbon, SMART-CDM protocol, registration, verification etc which the system can use for writing proposals for CDM which is otherwise done by external agencies at very exorbitant costs.

Assessment of future human capital requirements in agriculture and allied sectors

The ICAR as a nodal agency for research, education and extension activities in the country, like to have some estimates based on scientific studies the supply and demand of human resources in agriculture. This will help in taking several policy decisions. NAARM is implementing the project in partnership with Institute of Applied Manpower Research (IAMR), New Delhi. The study will focus on technical manpower in agriculture and allied sectors. The progress made is summarized below:

- Developed tools for nation wide data collection from variety of agri-organisations
- Expert consultation on methodology completed
- Participatory approach in developing study framework would be followed
- Mixed methodology approach is being adopted for data collection.
- Pre-testing of all the survey tools will be done before finalisation

Assessment of Impact of Climate Change on Water-Energy Nexus in Agriculture under Canal Irrigation System

Climate change adds uncertainty to water availability for canal irrigation systems in medium-to long-terms, which are not easily perceived by the government agencies, local agrarian communities and other stakeholders. The project is implemented by the IIM-Ahmedabad, with two other partners. The salient points of progress are summarized below:

- A flexible GIS framework for demand assessment has been devised which can be used for assessments of water demands for various present and future scenarios by changing certain inputs.
- A method of computing crop water requirements has been devised in GIS environment based on the actual crop ET and spatial distribution of various crops at a high resolution of block-level.
- Frameworks have been created for analysis and linking climate change, water balance, water demand projection, energy use and GHG emissions
- Block-level database collection completed in 17 districts of UP.

Sub-component 1.5: Remodeling Financial and Procurement Systems (RFPS)

A Financial Management System, on line ERP based has been developed & implemented initially in PIU-NAIP and other six ICAR Delhi based Institute namely IARI, IASRI, NCIPM, DIPA, NCAP, NBPGR, and accordingly the FMS has been signed-off in these Institutions. In the last mission time certain deficiencies in the reporting mechanism were pointed out, which now have been removed. The software has now successfully been rolled out, while doing so the realigned reports as per the advice of World Bank and our requirement were generated and got certified.

SUB-PROJECTS-WISE RESEARCH PROGRESS

In the last Mission of the World Bank, it was decided that all the activities related to FMS/ MIS may be brought out under a project mode so that the Implementation could be accelerated. Accordingly, a project document has been developed in consultation with PWC who is also functioning as PMC for these activities. The project has now been approved by the competent authority. The process of hiring of MIS implementation team has already been started. EOI is completed; six firms have been selected for RFP. RFP has been developed & will be issued to these firms as soon as it is cleared from the World Bank and it is hoped that SI will be hired by September 2010.

In the meantime, a team of eight Officers from ICAR system has also been constituted for helping in the implementation of this project in the NAIP as well as in the ICAR. Further, three-member IT team has also been hired, who will take over from M/S PWC.

Sub-component 1.1 Information, Communication and Dissemination System (ICDS)

Development of Central data Center and Secured Intranet

Under this sub-component, following 19 sub-projects have been sanctioned:

S.No.	Project	Implementing organizations	Date of Start	Budget (₹ million)	Duration
1.	Krishi Prabha-Indian Agricultural Dissertations Repository	CCSHAU, Hisar	November 2007	13.2073	2 Years
2.	Consortium for e-Resources in Agriculture (CeRA)	IARI, New Delhi	November 2007	276.5237	5 years
3.	Development of e-courses for B.Sc. (Agriculture) degree program	TNAU, Coimbatore	November 2007	13.520	2 Years
4.	Development of e-courses for B.V.Sc. & A.H. degree Programme	TNVASU, Chennai	November 2007	18.3589	3 Years
5.	Re-designing the farmer-extension-agricultural research/education continuum in India with ICT-mediated knowledge management	ICRISAT, Hyderabad + 6 partners	January 2008	87.6446	2 Years 6 months
6.	Agro web—Digital Dissemination System for Indian Agricultural Research (ADDSIAR)	NBPGR, New Delhi + 8 partners	June 2008	52.687	2 Years
7.	Development of e-courses for B.Sc (Hort) degree programe	UHS, Bagalkot + 2 partners	June 2008	23.423	2 Years 6 months
8.	Development of e-courses for B.F.Sc degree programe	KVAFSU, Mangalore + 1 partner	June 2008	25.244	3 Years
9.	e-Home Science Courseware consortium	ANGRAU, Hyderabad +2 partners	November, 2008	29.219	3 Years
10.	E-Publishing & Knowledge System in Agricultural Research	DIPA, New Delhi	November, 2008	34.609	3 Years 5 months

(Contd...)

(Concluded)

S.No.	Project	Implementing organizations	Date of Start	Budget (₹ million)	Duration
11.	Development of B.Tech (Dairy Technology) degree Programme	NDRI, Karnal+ 2 partners	April, 2009	29.888	3 Years
12.	Development and maintenance of Rice Knowledge Management Portal	DRR, Hyderabad+ 9 partners	April, 2009	58.7581	2 Years 6 months
13.	Strengthening Statistical Computing for NARS	IASRI, New Delhi+ 8 partners	April, 2009	125.8318	3 Years
14.	Mobilizing Mass Media Support for Sharing Agro-Information	DIPA, New Delhi+ 8 partners	May, 2009	44.035	3 Years
15.	Strengthening of digital library and information Management under NARS (e-GRANTH)	IARI, New Delhi+ 11 partners	May, 2009	86.1481	3 Years
16.	Decision Support System for Enhancing Productivity in Irrigated Saline Environment using Remote Sensing, Modelling and GIS	CSSRI, Karnal+ 2 partners	May, 2009	30.555	3 Years
17.	Development of ICT Based Tools/ and Technology towards an Interactive Multimedia Agriculture Advisory System	IIT-M's RTBI, Chennai + 4 partners	Oct, 2009	32.154	2 years 6 months
18.	Innovations in Technology Mediated Learning: An Institutional Capacity Building in using Re-usable Learning Objects in Agro-horticulture	YCMOU, Nashik, +3 partners	October, 2009	27.495	2 years and 6 months
19.	Developing, Commissioning, Operating and Managing an online Examination system for NET/ARS-Prelim Exam by ASRB, ICAR	ASRB,ICAR +25 partners	April, 2010	367.83	2 years 6 months

A brief progress made during April 2009 to March 2010 is given below sub-component wise.

Sub-projects wise Research Progress

1. Sub-project: Krishi Prabha–Indian Agricultural Dissertations Repository

- (i) Project Code : 11002
- (ii) Sanctioned date : 01.10.2007
- Completion date : 31.03.2011
- Budget (₹ in lakh) : 132.073
- (iii) Consortia P.I. and Lead Institute : Dr Indira Bajaj
(Name, designation and full address) CCSHAU, Hisar
01662-289416
krishaprabha@gmail.com

SUB-PROJECTS-WISE RESEARCH PROGRESS

- (iv) Partners : 45 SAUs/DUs as Data Centres
 (v) Website : <http://www.hau.ernet.in>
 (vi) Objectives:
 1. To develop, organize and sustain knowledge base of Indian Agricultural Doctoral Dissertations in digital form and make it accessible online.
 2. To develop a standard format for submission of e-theses by the SAUs/DAUs (Data Centres) to the Lead Centre.
 3. To upgrade skills of human resources of SAUs/DAUs/ICAR Institutes.
 4. To publish a journal in electronic form/hard copy form from the Database.
- (vii) Research Progress:
- Data of 2,374 dissertations captured. Quality check of 3,343 and uploading of 3343 dissertations (It includes uploading backlog of 1,469 dissertations of previous year).
 - Added 74 new SAUs/DAUs/ICAR institutional members for access of database
 - Data export facility created: Data can be imported to any standard format after exporting it to MS-Excel which is a standard software.
 - 13,324 hits recorded on the site
 - Google has proposed to index the contents of KrishiPrabha database in Google Scholar which indicates that there is a good response to the database.
- (viii) The status of the utilization of the budget under this sub-project upto March, 2010 is presented below:

KrishiPrabha

- Over 6,000 PhD theses have been digitized and hosted on the internet
- Over 20,000 hits and 6,500 downloads recorded on the website so far
- **Google**, proposes to index the contents of Krishi Prabha database in **Google Scholar**
- The effort will facilitate better research and avoid duplication and plagiarism.

Status of utilization of budget under the sub-project upto March, 2010

(₹ in lakh)

Lead centre/ Co-partners	Total sanctioned budget	Fund released upto March 2010	Fund utilized upto March 2010	Fund utilized to Released (%)
CCSHAU, Hisar	132.073	112.765	95.789	85
Total	132.073	112.765	95.789	85

2. Sub-project: Consortium for e-Resources in Agriculture (CeRA)

- (i) Project Code : 11003
 (ii) Sanctioned date : 08.10.2007
 Completion date : 31.07.2012
 Budget (₹ in lakh) : 2765.237
 (iii) Consortia P.I. and Lead Institute : Dr H. Chandrasekharan
 (Name, designation and full address) IARI, New Delhi
 011-25842490, 25841255, 09810046968
 head_usi@iari.res.in

(iv) Partners:

- 126 Institutions in NARS comprising all ICAR Institutes and State Agricultural Universities

(v) Website: www.cera.jccc.in

(vi) Objectives:

1. To upscale the existing R&D information resource base of ICAR Institutions/ Universities comparable to world's leading institutions/organizations.
2. To subscribe e-journals and create e-access culture among scientists/teachers in ICAR Institutes/Agricultural Universities.
3. To assess the impact of CeRA on the level of research publications measured through Science Citation Index.

(vii) Research Progress:

- The homepage of CeRA has been updated to include more options
- Based on negotiations and discussions, subscriptions to more than 2000 journals for online accessibility from select reputed publishers were made available to all researchers in 123 institutions in NARS through CeRA platform.
- During the reporting period one awareness workshop (at Port Blair) was held and all scientists in CARI were given a brief demo on potentialities of CeRA facilities.
- Awareness of CeRA among researchers in NARS has increased by 1.87 times (approximately) as revealed from the download statistics (*Average monthly downloads during Apr. 2008–Mar. 2009: 14184 and Average monthly downloads during Apr. 2009–Aug. 2009: 26582*).
- In a nutshell, CeRA website is the most sought-after facility for accessing online journals by researchers in NARS.

CeRA

- CeRA provide online access to over 2,000 international journals in 124 libraries
- Till December 2009, over 650,000 articles have been downloaded from CeRA subscribed publishers. Assuming a cost of US\$ 2 per article, the consortium has already recovered ₹ 58.5 million, against an expenditure of ₹ 95 million made so far
- Further, NARS is saving approximately ₹ 600 million annually, because of the formation of the Consortium and the negotiations for higher discount from the publishers

(viii) The status of the utilization of the budget under this sub-project upto March, 2010 is presented below:

Status of utilization of budget under the sub-project upto March, 2010

(₹ in lakh)

Lead centre/ Co-partners	Total sanctioned budget	Fund released upto March 2010	Fund utilized upto March 2010	Fund utilized to released (%)
IARI, New Delhi	2,765.237	1,020.388	640.920	63
Total	2,765.237	1,020.388	640.920	63

3. Sub-project: Development of e-Courses for B.Sc. (Agriculture) degree program

- (i) Project Code : 11005
- (ii) Sanctioned date : 31.10.2007
Completion date : 31.03.2010
Budget : 135.2
- (iii) Consortia P.I. and Lead Institute : R. Venkatachalam
(Name, designation and full address) TNAU, Coimbatore
09787111348, 0422-6611328
kat@tnau.ac.in, venkat.tau@me.com
- (iv) Partners: No partnership with other institute
- (v) Website: <http://mms.tnau.ac.in>
- (vi) Objectives:
1. Creation of eCourseware for B.Sc.(Agriculture) for National 4th Deans' Committee syllabus
 2. Creation of eContent to supplement class lecture to evoke interest and promote interaction
 3. Online and offline (CD/DVD) delivery of content
 4. Creation of Shareable learning objects repository
 5. Hosting of content locally during development and finally in the National Data Center
- (vii) Research Progress:
- The introduction of Class + Content, portable-anytime-anywhere lectures with content, and making it available online as well as offline continue to captivate the fresh undergraduates and creating an interest to own their laptops to use the available ecourseware effectively. Further, there was remarkable improvement on the presentation skills of the students.
 - Principal Secretary, Embassy of Rwanda who visited TNAU was captivated by the e-courseware and other e-initiatives of TNAU which resulted in admission of 10 students from Rwanda in the current academic year.
- (viii) The status of the utilization of the budget under this sub-project upto March, 2010 is presented below:

Status of utilization of budget under the sub-project upto March, 2010

(₹ in lakh)

Lead centre/ co-partners	Total sanctioned budget	Fund released upto March 2010	Fund utilized upto March 2010	Fund utilized to released (%)
TNAU, Coimbatore	135.200	134.760	99.210	74
Total	135.200	134.760	99.210	74

4. Sub-project: Development of e-Courses for B.V.Sc. & A.H. degree Programme

- (i) Project Code : 11004
- (ii) Sanctioned date : 29.10.2008
Completion date : 30.11.2010
Budget (₹ in lakh) : 183.59

- (iii) Consortia P.I. and Lead Institute : Dr M. Thirunavukkarasu
(Name, designation and full address) Tamil Nadu Veterinary and Animal Sciences
University, Chennai
044-25392737, 09444210357
drthiruarasu@yahoo.com
- (iv) Partners : No partnership with other institute
- (v) Website : <http://www.elearnvet.net>
- (vi) Objectives:
1. To create interactive multimedia e-learning modules for the BVSc & AH courses as per the syllabi stipulated by the Veterinary Council of India.
 2. To create a shareable repository of learning resources in veterinary and animal sciences.
 3. To deliver the modules, so developed, online (web) and offline (CD/DVD) so as to reach out to even the less endowed institutions/faculty/students.
 4. To promote learning effectiveness through empowering teachers with more effective tutoring skills.
- (vii) Research Progress:
- Hosted about 85% of e-contents in Moodle platform and made them available on <http://www.elearnvet.net>
 - 100% of the e-course contents have been created for ten courses for online and offline delivery for evaluation and feedback by students of other institutions, as requested by the PMAC.
 - Provision of (non-editing) access to the online contents to all the Co-teachers to view the online contents to enable them to give suggestions then and there for better output of e-courses.
 - Co-teachers and the peer reviewer accessed the e-content created and given the feedback for the improvement of the course.
 - Honorarium for 74 content developers and 55 co-teachers were disbursed after getting their comments.
- (viii) The status of the utilization of the budget under this sub-project upto March, 2010 is presented below:

Status of utilization of budget under the sub-project upto March, 2010

(₹ in lakh)

Lead centre/ Co-partners	Total sanctioned budget	Fund released upto March 2010	Fund utilized upto March 2010	Fund utilized to released (%)
TNVASU, Chennai	183.59	93.30508	64.53112	69.16
Total	183.59	93.30508	64.53112	69.16

5. Sub-project: Development of e-Courses for B.F.Sc. degree program

- (i) Project Code : 11010
- (ii) Sanctioned date : 26.05.2008
- Completion date : 31.03.2011
- Budget (₹ in lakh) : 252.44

SUB-PROJECTS-WISE RESEARCH PROGRESS

- (iii) Consortia P.I. and Lead Institute : Dr B.A. Shamsundar
 (Name, designation and full address) KVAFSU, Mangalore
 0824-2427898, 2427890, 09448250057
 bashamasundar@rediffmail.com
- (iv) Partners:
 Fisheries College and Research Institute, Thoothkudi (TNVAS University)
- (v) Website: www.cofmelearn.org
- (vi) Objectives:
1. To create interactive multimedia e-learning modules for the B.F.Sc. courses as per the syllabi approved by the Indian Council of Agricultural Research, New Delhi.
 2. To create a shareable repository of learning resources in fisheries sciences;
 3. To deliver the modules, so developed, online (web) and offline (DVD/Blue Ray Media) so as to reach out to even the less endowed institutions/faculty/students.
 4. To promote learning effectiveness through empowering teachers with more effective tutoring skills.
- (vii) Research Progress:
- Capacity building of 56 faculty members in e-courses preparation was completed.
 - Web site for the project launched and e-courses web hosted for the use of the content developers.
 - E-learning and Multimedia laboratory constructed at a cost of ₹ 18 lakh at Fisheries College and Research Institute, Thoothkudi.
 - Procurement of Hardwares and Softwares for the development of e-courses made.
 - Multimedia development (animation/video) has been completed to 2 courses and for remaining courses, it is at various stages of development.
 - Complete development of course content for Soil and Water Chemistry and Metrology including animation and video have been completed.
- (viii) The status of the utilization of the budget under this sub-project upto March, 2010 is presented below:

Status of utilization of budget under the sub-project upto March, 2010

(₹ in lakh)

Lead centre/ Co-partners	Total sanctioned budget	Fund released upto March 2010	Fund utilized upto March 2010	Fund utilized to released (%)
KVAFSU, Mangalore	130.920	106.790	68.250	64
Fisheries College and Research Institute, Thoothkudi	121.520	91.630	31.220	34
Total	252.440	198.420	99.470	50

6. Sub-project: Development of e-courses for B.Tech (Dairy Technology) degree programme

- (i) Project Code : 11018
- (ii) Sanctioned date : 20.04.2009
Completion date : 30.09.2011
Budget (₹ in lakh) : 298.89
- (iii) Consortia P.I. and Lead Institute : Dr A.A. Patel
(Name, designation and full address) NDRI, Karnal
0184-2259240, 2259270, 09466240383
ashok.ap@sify.com, aapatel@ndri.res.in
- (iv) Partners : SVVU–Tirupati and AAU- Anand
- (v) Website : www.ndri.res.in
- (vi) Objectives:
1. Creation of interactive multimedia course content for B.Tech (Dairy Technology) degree programme in accordance with ICAR's fourth Deans Committee recommendations.
 2. Creation of e-Content to evoke interest among the learners and promote classroom and online interaction.
 3. On-line (Web) and Off-line (CD/DVD) delivery of the course content to enhance class-room teaching.
 4. Hosting the created content in the server to be shared by all Dairy science colleges/ Institutes across the nation.
 5. To promote learning effectiveness through empowering teachers with more effective tutoring skills.
- (vii) Research Progress:
- One Launch workshop held at NDRI (Lead center)
 - Two review meetings held (December 2009 and February 2010)
 - 32 teachers, 2 RAs, and 5 SRFs trained in e-learning, Content Development and Multimedia.
 - International Training of two Co-PIs at Cornell University, USA (10–28 March, 2010) completed.
 - Textual contents in 9 courses developed.
 - Procurements of goods like Desktops with accessories, Laptop, Scanners, Digital Cameras, Handy came, Video Editing, Web servers, Database Server, Air conditioners, digitizer, Interactive Board, Plasma Screen, UPS, CD/DVD 1+7 Mass Duplicator, Softwares, Video Editing etc. has been completed; procurement of Furniture and Renovation/Conversion of e-Lab Completed.
- (viii) The status of the utilization of the budget under this sub-project upto March, 2010 is presented below:

Status of utilization of budget under the sub-project upto March, 2010

(₹ in lakh)

Lead centre/ Co-partners	Total sanctioned budget	Fund released upto March 2010	Fund utilized upto March 2010	Fund utilized to released (%)
NDRI, Karnal	148.580	61.210	44.215	72
SVVU, Tirupati	75.480	28.850	28.130	98
AAU, Anand	74.830	28.980	22.161	76
Total	298.890	119.040	94.507	79

7. Sub-project: e-Home Science Courseware Consortium

- (i) Project Code : 11016
- (ii) Sanctioned date : 17.11.2008
Completion date : 30.11.2011
Budget (₹ in lakh) : 292.19
- (iii) Consortia P.I. and Lead Institute : Dr K. Mayuri
(Name, designation and full address) College of Home Science
ANGRAU, Hyderabad
09177532608
pramaynn@yahoo.com
- (iv) Partners:
- College of Rural Home Science, UAS, Dharwad
 - College of Home Science, GBPUA&T, Pantnagar
- (v) Website: Under construction
- (vi) Objectives:
1. Creation of interactive multimedia course content for B.Sc (Home Science) in accordance with the National 4th Dean's committee recommendations
 2. Creation of e- course content to generate interest among the learners and promote classroom and online interaction
 3. On-line and Off-line (CD/DVD) delivery of content to enhance the class room teaching
 4. Hosting the created content developed on the server to be shared by all Home Science colleges in SAUs
 5. To promote learning effectiveness through empowering teachers with more effective tutoring skills
 6. To promote effective sharing of ideas and locale specific experiences among teachers
- (vii) Research Progress:
- Completed trainings for staff in multimedia content development and Content management, Procurement processes and template development – 6 trainings (including International Training for CPI Dr K. Mayuri)
 - Procured all necessary equipment – 16 nos.
 - Renovation and works completed – e-learning resource room, e- class room
 - Course content development mid way, 23 courses completed 16 in process, 12 yet to start
 - Multimedia work initiated; testing different templates for the e- learning modules

(viii) The status of the utilization of the budget under this sub-project upto March, 2010 is presented below:

Status of utilization of budget under the sub-project upto March, 2010

(₹ in lakh)

Lead centre/ Co-partners	Total Sanctioned Budget	Fund Released upto March 2010	Fund Utilized upto March 2010	Fund Utilized to Released (%)
ANGRAU, Hyderabad	188.820	88.420	28.788	33
College of Rural Home Science, UAS, Dharwad	57.470	22.030	19.981	91
College of Home Science, GBPUA&T, Pantnagar	45.900	20.380	19.021	93
Total	292.190	130.830	67.790	52

8. Sub-project: Development of e-courses for B.Sc. (Hort.) Degree Programme

- (i) Project Code : 11008
- (ii) Sanctioned date : 26.05.2008
Completion date : 08.05.2011
Budget (₹ in lakh) : 234.23
- (iii) Consortia P.I. and Lead Institute : Dr B. Hemla Naik
(Name, designation and full address) UAS, Bangalore
08263-228022, 09448862225
hemlanaik@gmail.com
hemlanaikb@rediffmail.com
- (iv) Partners: 1. TNAU, Coimbatore
2. YSPUH & F, Nauni, Solan
- (v) Website: Under construction
- (vi) Objectives:
Main Objective: Development of e-Courseware for B.Sc. (Hort.) degree program in accordance with the National 4th Deans Committee Recommendations”.

Sub Objectives

- Creation of e-content for supplementing class lectures.
 - On-line and Off-line delivery of e-contents and Creation of shareable learning repository and web hosting.
- (vii) Research Progress:
- 30 e-course teachers trained at college of Horticulture, Mudigere on 23– 28 October, 2009
 - 26 e-course teachers trained at NAARM, Hyderabad on 02–11 December, 2009
 - CPI and Co-PI’s Trained at Cornell University, Ithaca, NY, USA from 11 to 20, March 2010
- (viii) The status of the utilization of the budget under this sub-project upto March, 2010 is presented below:

Status of utilization of budget under the sub-project upto March, 2010

(₹ in lakh)

Lead centre/ Co-partners	Total Sanctioned Budget	Fund Released upto March 2010	Fund Utilized upto March 2010	Fund Utilized to Released (%)
UAS, Bangalore	120.76	67.46	53.03	78.61
TNAU, Coimbatore	63.70	37.71	33.30	88.31
UHF, Nauni, Solan	49.77	19.74	19.95	101.06
Total	234.23	124.91	106.28	85.09

9. Sub-project: Re-designing the farmer-extension–agricultural research/education continuum in India with ICT- mediated knowledge management

- (i) Project Code : 11007
- (ii) Sanctioned date : 07.01.2008
Completion date : 30.06.2010
Budget (₹ in lakh) : 876.446
- (iii) Consortia P.I. and Lead Institute : Dr V Balaji
(Name, designation and full address) ICRISAT, Hyderabad
040-30713205, 09849592205
balaji@cgiar.org
- (iv) Partners:
- International Crops Research Institute for the Semi-Arid Tropics (ICRISAT)
 - Indian Institute of Technology-Kanpur (IIT-Kanpur)
 - Indian Institute of Technology-Bombay (IIT-Bombay)
 - Indian Institute of Information Technology and Management–Kerala (IIITM-Kerala)
 - G B Pant University of Agriculture & Technology (GBPUAT)
 - National Academy of Agricultural Research Management (NAARM)
 - University of Agricultural Sciences-Raichur (UAS-Raichur)
- (v) Website: <http://agropedia.net/>
- (vi) Objectives:
1. To build, demonstrate and sustain a model agricultural knowledge organization and system in support of extension in India.
 2. To develop and manage an online and offline forum for management of farm level Q&A and discussions which is integrated with knowledge generation and organization.
 3. To build and demonstrate an online as well as offline multi-modal information delivery arrangement linking online content and expert knowledge with query services.
 4. To build and sustain geospatial data and knowledge organization systems to support agricultural research, education and technology transfer.
 5. To build capacity among agricultural experts in the advanced management of highly integrated information services in support of education, research and extension.
 6. To develop methods for viable integration of back-end digital systems and processes to foster autonomous, long-term collaboration between the ICT sector and the NARS organizations in India.

(vii) Research Progress:

- Agropedia launched online, Crop Knowledge Models for nine crops developed, validated and used in agropedia. New online content management tools released; about 3,600 web pages added. Online material is available with over 900 contributors registered.
- aAQUA (web) now reaches 12,000 farmers in three States; 7 experts have over 100 000 views each.
- Using SMS on mobile phones and 17,000 farmers; 678 SMS messages generated. Voice aAQUA covered 26,473 with 641 audio tips.
- About 500 NARES experts from the partner SAU's and 24 other NARES organizations have been trained in the testing and use of ICT platforms and products developed
- Open WebGIS and LAN-based GIS products (geo-spatial library in support of rural development) developed and released along with online decision support system for fertilizer inputs (8 crops/23 varieties/2 States).

(viii) The status of the utilization of the budget under this sub-project upto March, 2010 is presented below:

Status of utilization of budget under the sub-project upto March, 2010

(₹ in lakh)

Lead centre/ Co-partners	Total sanctioned budget	Fund released upto March 2010	Fund utilized upto March 2010	Fund utilized to Released (%)
ICRISAT, Hyderabad	274.44	233.52	222.01	95.07
IIT, Kanpur	131.95	110.77	39.91	26.03
IIT, Mumbai	86.81	79.21	66.24	83.63
IIITM, Kerala	86.64	70.04	26.59	37.96
NAARM, Bangalore	142.92	34.38	45.55	132.49
UAS, Raichur	78.66	58.53	23.08	39.43
GBPUAT, Uttarakhand	75.02	42.01	40.91	97.38
Total	876.44	628.46	464.29	73.88

10. Sub-project: Agroweb–Digital Dissemination System for Indian Agricultural Research, ADDISAR

- (i) Project Code : 11009
- (ii) Sanctioned date : 01.06.2008
Completion date : 31.03.2010
Budget (₹ in lakh) : 526.87
- (iii) Consortia P.I. and Lead Institute : Dr R.C. Agrawal
(Name, designation and full address) NBPGR, New Delhi
011-25846074, 25843697, 9899008855
rakesh@nbpgr.ernet.in
- (iv) Partners:
- Dr R.C. Agrawal (NBPGR), New Delhi
 - Dr T. Ravisankar (CIBA), Bhubaneshwar
 - Dr K.V. Rao (CRIDA), Hyderabad

- Dr H. Chandrasekharan (IARI), New Delhi
 - Mr Himanshu (ICAR HQ), New Delhi
 - Mr M.K. Chandraprakash (IIHR), Bangalore
 - Dr G.R.K. Murthy (NAARM), Hyderabad
 - Mr Niranjan Singh
 - Dr Dhandapani (NCIPM), New Delhi
 - Dr D.K. Jain (NDRI), Karnal
- (v) Website: www.nbpg.ernet.in/planning
- (vi) Objectives:
1. To identify standards, develop uniform guidelines, content management strategies and a model template for websites of ICAR institutes.
 2. To develop model website of all consortium partners to meet requirements of stakeholders.
 3. To design and develop ICAR 'Portal' and integrating the websites of consortium partners
 4. To build capacity of personnel in ICAR institutes in design, development and management of websites
- (vii) Research Progress:
- One Report containing Standards and Uniformity **Guidelines developed and circulated to all the ICAR Institutes through ADG (ARIS) for its adoption.**
 - Content management System platform using open source software has been finalized and recommended for implementation for partner institute website. About 10 partner institutes have adopted the templates for their websites.
 - Databases on "Online application for generating Hall-tickets for SRF exam"; "Online updating of scientist profile", "Online PDF Search", Online training management module", "On-line Intellectual Property Right (IPR) Information System"; "Online monitoring of AGROWEB Project"; "Tissue Culture Database"; "Germplasm Quarantine and Exchange Database"; "On-line submission of applications for import of germplasm"; "ICAR Plant Variety Registration System", "Digital databases on crop, production, area statistics"; "Template for AICRP on Dryland Agriculture Centres", "Horticultural crop database: Varieties and Hybrids"; "Market Information services: Price, arrival, Area, Production and Productivity information along with online graphical charts on selected Horticultural crops"; "databases on insect pests, diseases, weeds etc of important crops"; "Aquaculture production and export scenario"; Web-enabled Information System on Availability and Sources of Superior Germplasm of Cattle and Buffaloes"; "Web-enabled Information System on National Collection of Dairy Cultures"; and "Web-based Decision Support System for Livestock Farm Management by Monitoring the Herd Strength and Expected Producing Ability of Cattle and Buffaloes have been developed and implemented; Web enabled faculty and student information system developed; A website template under open source DRUPAL.
 - To provide exposure on new generation web technologies and to build capacity in Design, development and management of websites a training programme

on Web standards, Technologies Standardization was held at NAARM. About 60 participants from various ICAR institutions have been trained in this context.

- (viii) The status of the utilization of the budget under this sub-project upto March, 2010 is presented below:

Status of utilization of budget under the sub-project upto March, 2010

(₹ in lakh)

Lead centre/ Co-partners	Total sanctioned budget	Fund released upto March 2010	Fund utilized upto March 2010	Fund utilized to released (%)
NBPGR, New Delhi	197.150	116.970	57.550	49
CIBA, Bhubaneswar	29.450	22.270	22.220	100
CRIDA, Hyderabad	38.840	33.440	32.780	98
IARI, New Delhi	38.930	35.980	33.240	92
ICAR, New Delhi	80.460	75.890	19.050	25
IIHR, New Delhi	22.710	20.410	19.540	96
NAARM, Bangalore	65.960	55.270	46.620	84
NCIPM, New Delhi	14.360	9.280	12.680	137
NDRI, Karnal	39.010	29.660	24.560	83
Total	526.870	399.170	268.240	67

11. Sub-project: Development and maintenance of Rice Knowledge Management Portal

- (i) Project Code : 11028
- (ii) Sanctioned date : 1.6.2006
Completion date : 31.12.2011
Budget (₹ in lakh) : 587.582
- (iii) Consortia P.I. and Lead Institute : Dr Shaik N.Meera
(Name, designation and full address) DRR, Hyderabad
040-24591218, 09949261911
shaiknmeera@gmail.com
- (iv) Partners:
- Dr G.A.K. Kumar, CoPI CRRI, Cuttack
 - Dr V. Balaji, ICRISAT, Hyderabad
 - Dr B.N. Singh, BAU, Ranchi
 - Dr P.S. Pandey, IARI, New Delhi
 - Dr C. Kathiresan, CDAC, Hyderabad
 - Dr A.K. Mohanty, ICAR-NEH, Umiam
 - Dr M.P. Rajanna, ZARS, Mandya
 - Dr R.L. Kunkerkar, RARS, Karjat
- (v) Website: Under construction
- (vi) Objectives:
1. To develop structure and content of RKMP comprising research information systems, extension information system, service information system, farmers information system, general information system and e-learning platform related to rice.

SUB-PROJECTS-WISE RESEARCH PROGRESS

2. To pilot these information systems for uploading, sharing and harnessing rice knowledge amongst rice stakeholders.
3. To build the capacity of the stakeholders in using the Rice Knowledge Management Portal for effectively transforming rice knowledge and information as a viable factor of production.

(vii) Research Progress:

- Launch Workshop was organized at during 16–17 June 2009. Regional Launch Workshops were also organized at ZARS, Mandya; BAU, Ranchi; RARS, Karjat; ICAR-NEH Region, Barapani; CRRI, Cuttack
- Design features Workshop conducted on 18 December 2010. Finalized design features and functional requirements of the portal are in place. Four navigational schemes and key features are worked out. CD Workshop was organized during 5–6 March 2010. During this, strategies were chalked out for developing the content from 15 states of the country.
- A comprehensive Information Architecture was developed with about 2,500 content heads under which RKMP content.
- Minimum Content Requirements of partners are finalized.
- Rice content Development workshops have been organized to collect, treat and refine the content for five states
- For the attributes of area, production and productivity trends, datasets have been developed; Maps have been developed for 29 states/UTs of the country. A prototype Management Information System for AICRIP, aAqua (Question-answer platform) have been developed

(viii) The status of the utilization of the budget under this sub-project upto March, 2010 is presented below:

Status of utilization of budget under the sub-project upto March, 2010

(₹ in lakh)

Lead centre/ Co-partners	Total sanctioned budget	Fund released upto March 2010	Fund utilized upto March 2010	Fund utilized to released (%)
DRR, Hyderabad	324.549	81.575	88.189	108
ZARS, Mandya	29.246	9.729	9.392	97
IARI, New Delhi	34.434	13.233	11.203	85
ICAR-NEH, Meghalaya	29.746	10.303	9.283	90
ICRISAT, Hyderabad	30.846	8.462	6.104	72
C-DAC, Hyderabad.	27.504	4.473	1.070	24
CRRI, Cuttack	53.290	18.004	13.269	74
BAU, Ranchi	31.071	9.133	9.769	107
RARS, Karjat	26.896	9.133	7.356	81
Total	587.582	164.045	155.635	95

12. Sub-project: **Decision Support System for Enhancing Productivity in Irrigated Saline Environment using Remote Sensing, Modelling and GIS**

- (i) Project Code : 11023
- (ii) Sanctioned date : 12.05.2009
Completion date : 31.03.2012
Budget (₹ in lakh) : 305.55
- (iii) Consortia P.I. and Lead Institute : Dr D.S. Bundela
(Name, designation and full address) Central Soil Salinity Research Institute (CSSRI), Karnal
0184-2291119 ext 218, 09466064078
dbundela@cssri.ernet.in
dsbundela@hotmail.com
- (iv) Partners:
- Water Technology Centre (WTC), IARI, Pusa, New Delhi
 - National Institute of Hydrology (NIH), Roorkee 247 667
- (v) Website: www.cssri.org/dss4wyc.htm
- (vi) Objectives:
1. To characterize bio-physical and socio-economic resources of the Western Yamuna Canal command using remote sensing, GPS based field survey, participatory rural appraisal (PRA) and GIS.
 2. To predict and upscale crop yield and land and water productivity from field to command scale under various resource constraints and management scenarios using crop production functions and GIS.
 3. To develop, validate and implement spatial decision support system in the command and to generate best management practices (BMPs) for enhancing productivity in irrigated saline environment.
 4. To build stakeholders' capacity on DSS generated scenarios through field demonstrations, customized trainings, workshops and field days and to disseminate knowledge to various stakeholders
- (vii) Research Progress:
- Geoinformatics laboratories equipped with industry leading software and hardware tools
 - Developed an irri-agro informatics database of the western Yamuna canal command
 - Primary data generated through field experiments or calibration and subsequent validation of models for use in DSS.
 - DSS framework developed
 - Sensitized 94 stakeholders from four districts in problem domain
 - Developed an irri-agro informatics database of the Western Yamuna Canal (WYC) command from the secondary source maps and satellite data using ArcGIS. The database includes canal network up to tertiary level, contours, soil quality and geology, land use, current land use from satellite data, cropping system, groundwater quality, soil salinity, rainfall, rail and road networks, socio-economic data, canal water users'

association database. This database will help in identification of areas of low productivity on the basis of combination of resource availability and underlying constraints.

- (viii) The status of the utilization of the budget under this sub-project upto March, 2010 is presented below:

Status of utilization of budget under the sub-project upto March, 2010

(₹ lakhs)

Lead centre/ Co-partners	Total sanctioned budget	Fund released upto March 2010	Fund utilized upto March 2010	Fund utilized to Released (%)
CSSRI, Karnal	165.760	76.930	42.820	56
WTC, New Delhi	91.850	43.780	23.500	54
NIH, Roorkee	47.940	27.410	9.210	34
Total	305.550	148.120	75.530	51

13. Sub-project: Strengthening Statistical Computing for NARS

- (i) Project Code : 11022
- (ii) Sanctioned date : 20.04.2009
Completion date : 19.03.2012
Budget (₹ in lakh) : 1258.318
- (iii) Consortia P.I. and Lead Institute : Dr Rajender Parsad
(Name, designation and full address) IASRI, New Delhi
011-25843573
Rajender@iasri.res.in
rajender1066@yahoo.co.in
- (iv) Partners:
- NDRI, Karnal
 - IVRI, Izatnagar
 - MPUAT, Udaipur
 - Directorate of Water Management, Bhubaneswar (Earlier WTCER)
 - ICAR Research Centre NEH, Barapani
 - University of Agricultural Science, Bangalore
 - NAARM, Hyderabad
 - CIFE, Mumbai
- (v) Website: <http://web.iasri.res.in/nars>
- (vi) Objectives:
1. To strengthen the high end statistical computing environment for the scientists in NARS.
 2. To organize customized training programmes and also develop training modules and manuals for the trainers at various hubs.
 3. To sensitize the scientists in NARS with the statistical computing capabilities available for enhancing their computing and research analytics skills.

(vii) Research Progress:

- Received nomination of 136 Nodal Officers from different ICAR Institutes/State Agricultural Universities/Project Directorates, etc.
- Received IP addresses of 103 ICAR Institutes/State Agricultural Universities/Project Directorates, etc.
- The equipments have been purchased and statistical computing labs have been established at most of the Centres

(viii) The status of the utilization of the budget under this sub-project upto March, 2010 is presented below:

Status of utilization of budget under the sub-project upto March, 2010

(₹ in lakh)

Lead centre/ Co-partners	Total Sanctioned Budget	Fund Released upto March 2010	Fund Utilized upto March 2010	Fund Utilized to Released (%)
IASRI, New Delhi	977.775	68.958	42.587	62
NDRI, Karnal	55.248	21.194	11.527	54
IVRI, Izatnagar	46.933	20.070	7.435	37
MPUA&T, Udaipur	47.091	20.111	10.966	55
WTCER, Bhubaneswar	57.301	21.216	10.300	49
ICAR-RCNEHR, Barapani	40.406	18.712	14.149	76
UAS, Bangalore	31.301	21.316	12.523	59
NAARM, Hyderabad	51.668	20.405	12.864	63
CIFE, Mumbai	52.776	20.954	13.481	64
Total	1,258.318	232.936	103.010	58

14. Sub-project: Mobilizing Mass Media Support for Sharing Agro-Information

- (i) Project Code : 11025
- (ii) Sanctioned date : 17.11.2008
Completion date : 31.03.2012
Budget (₹ in lakh) : 440.35
- (iii) Consortia P.I. and Lead Institute : Dr T.P. Trivedi
(Name, designation and full address) DIPA, ICAR, New Delhi
011-25842787
tptrivedi@icar.org.in

(iv) Partners:

- Indian Institute of Horticultural Research, Hessaraghatta, Bangalore
- Central Institute for Subtropical Horticulture, Rehmankhara, PO Kakori, Lucknow
- Indian Institute of Vegetable Research, Varanasi
- Indian Institute of Spices Research, Kerala
- Central Institute of Fisheries Technology, Kochi
- Central Institute of Post Harvest Engineering Technology
- ICAR Research Complex for NEH Region, Barapani, Shillong (Meghalaya)
- e-Extension Centre, Directorate of Extension Education, Tamil Nadu
- Agricultural University, Coimbatore-641 003,
- Govind Ballabh Pant University of Agriculture & Technology, Pantnagar, (Uttarakhand)

SUB-PROJECTS-WISE RESEARCH PROGRESS

- (v) Website: Under construction
- (vi) Objectives:
1. Strengthening of agricultural communication in the country
 2. Creation of an interactive and multi-layered communication system crossing economic, gender, language and social barriers
 3. To build up and harness synergy of inter-institutional communication platform in participatory mode
 4. Capacity building for agricultural communication in different modes and media
- (vii) Research Progress:
- 516 news clippings appeared in newspapers and internet during this period.
 - 88 Television/AIR programmes has been telecast.
 - A film by DIPA is under process.
 - Documentary on success story of Bachittar Singh, a farmer engaged in soyabean processing. The film was prepared and telecasted by Jalandhar Doordarshan on 22nd March, 2010.
 - A video film based on the success story on IISR intervention in Black pepper gardens in Coorg is ready.
 - IIHR, Bangalore produce a film on Banana Cultivation for Livelihood Security
 - 9 Media meet was successfully organized in order to liaison with media personnel from print and electronic media
 - 13 Exhibition/Programmes successfully organized for Showcasing of Technologies
- (viii) The status of the utilization of the budget under this sub-project upto March, 2010 is presented below:

Status of utilization of budget under the sub-project upto March, 2010

(₹ in lakh)

Lead centre/ Co-partners	Total sanctioned budget	Fund released upto March 2010	Fund utilized upto March 2010	Fund utilized to Released (%)
DIPA, New Delhi	57.04	12.87	12.52	97.28
IIHR, Bangalore	43.29	9.69	8.97	92.57
CISH, Lucknow	43.29	8.90	7.69	86.40
IIVR, Varanasi	42.24	8.16	8.16	100.00
IISR, Kerala	42.24	–	9.73	0.00
CIFT, Kochi	42.24	9.16	7.60	82.97
CIPHET, Ludhiana	42.24	9.16	8.36	91.27
ICAR Research Complex for NEH Region, Shillong	43.29	9.16	10.12	110.48
e-Extension centre, TNAU, Coimbatore	42.24	9.16	8.89	97.05
GBP UA&T, Pantnagar	42.24	9.16	6.85	74.78
Total	440.35	85.42	88.89	104.06

15. Sub-project: Strengthening of digital library and information Management under NARS (e-GRANTH)

- (i) Project Code : 11024
- (ii) Sanctioned date : 15.05.2009
 Completion date : 14.05.2012
 Budget (₹ in lakh) : 861.481
- (iii) Consortia P.I. and Lead Institute : Dr A.K. Jain
 (Name, designation and full address) IARI, New Delhi
- (iv) Partners:
- IVRI, Izatnagar
 - UAS, Bangalore
 - GBPUAT, Pantnagar
 - CCSHAU, Hisar
 - ANGRAU, Hyderabad
 - NDRI, Karnal
 - CIFE, Mumbai
 - CSKHPV, Palampur
 - MPKV, Rahuri
 - TNVASU, Chennai
 - ICAR Library, DIPA, New Delhi
- (v) Website: Under construction
- (vi) Objectives:
1. To create Online Public Access Catalog (OPAC) under “Indian Agricultural Research Group Catalogue” of all 12 library resources with Online Computer Library Center (OCLC) partnership.
 2. To digitize important institutional repositories (limited to IARI, IVRI and VAS, Bangalore) including rare books and old journals and make them open access under NARS.
 3. To strengthen capacity building for library and information management system (open to all libraries of NARS).
- (vii) Research Progress:
- Contractual Staff and essential equipments to start the work are in place.
 - Three Workshops/Tranings conducted timely.
 - Use of Connexion software for online current cataloguing, as a result of Workshop-cum-training on Union Cataloging using connexion software, held during 27–29 January 2010 at Bangalore which included a webinar by OCLC experts from US.
 - OCLC membership and project IDs for Batch uploading of existing cataloged data to OCLC has been obtained and 3,03,394 records uploaded by partners for processing.
 - Partners have also started preparing the inventory of important resources to be digitized & made open access under the project.
- (viii) The status of the utilization of the budget under this sub-project upto March, 2010 is presented below:

SUB-PROJECTS-WISE RESEARCH PROGRESS

Status of utilization of budget under the sub-project upto March, 2010

(₹ in lakh)

Lead centre/ Co-partners	Total sanctioned budget	Fund released upto March 2010	Fund utilized upto March 2010	Fund utilized to released (%)
IARI, New Delhi	159.822	65.600	19.345	29
IARI Library, New Delhi	153.541	28.931	9.470	33
IVRI, Izatnagar	149.332	27.818	7.710	28
UAS, Bangalore	153.541	28.931	9.169	32
GBPUAT, Pantnagar	16.551	5.904	3.215	54
CCSHAU, Hisar	16.551	5.904	4.398	74
ANGRAU, Hyderabad	112.591	22.106	9.309	42
NDRI, Karnal	18.501	5.642	4.860	86
CIFE, Mumbai	16.068	5.705	4.880	86
CSKHPV, Palampur	14.451	5.379	5.620	104
MPKV, Rahuri	14.556	5.327	4.488	84
TANUVAS, Chennai	17.118	5.967	5.082	85
ICAR Library, DIPA, New Delhi	18.858	5.704	2.068	36
Total	861.481	218.918	89.614	41

16. Sub-project: E-Publishing and Knowledge Systems in Agriculture Research (EPKSAR)

- (i) Project Code : 11012
- (ii) Sanctioned date : 01.11.2008
- Completion date : 31.03.2012
- Budget (₹ in lakh) : 346.09
- (iii) Consortia P.I. and Lead Institute : Shri Himanshu
- (Name, designation and full address) : DIPA, IARI, New Delhi
011-25843369
himanshu@icar.org.in
- (iv) Partners : No partnership with other institute
- (v) Website : <http://www.icar.org.in/node/381>
- (vi) Objectives:
 1. To develop an on-line, web-based agricultural research journal publishing portal, covering the entire process of research paper publishing, i.e. manuscript submission; peer-review process, decision making, paper revision and submission by author and language and technical editing. The portal would have e-journal production system and implementation of e-commerce tools for on-line subscription, delivery and sale of the journals, through an integrated payment gateway.
 2. To develop a web-enabled, full-text, searchable digital archive of the back issues (for last 12 years) of DIPA periodicals/journals and important agricultural books, as well as top journals (as rated by NAAS), published by Societies funded by ICAR (last 10 years).
 3. Development of suitable guidelines, policies and business model for marketing/sale of e-journals.

4. Empowering scientists with on-line information on recent breakthroughs/innovations in agricultural research, including flashing of success stories of ICAR technologies and innovative farmers.

(vii) Research Progress:

- Open access policy for the online ICAR Research journals developed.
- Online referee database for online-review of research articles developed with details 3,000 referees
- Process framework and guidelines for e-publishing of ICAR research journals documented.
- The electronic mail based communication has been started in DIPA for submission of articles and review of research articles.
- Authors have been requested to submit the articles only through email to the respective editors of research journal.
- An online database of referees has been prepared with details of 3,000 referees for email based Peer review process.
- Referee database is being used by the editors of all the editors of English periodicals for searching the suitable referee for an article; this application has provided more options, which are easily available. This saves lots of time.
- Referees are being requested to submit the reviews through email only. The email based communication has resulted in large savings in terms of time and money in March 2010.

(viii) The status of the utilization of the budget under this sub-project upto March, 2010 is presented below:

Status of utilization of budget under the sub-project upto March, 2010

(₹ in lakh)

Lead centre/ Co-partners	Total sanctioned budget	Fund released upto March 2010	Fund utilized upto March 2010	Fund utilized to released (%)
DIPA, IARI, New Delhi	346.090	105.750	30.660	29
Total	346.090	105.750	30.660	29

17. Sub-project: Development of ICT Based Tools/Technology towards an Interactive Multimedia Agriculture Advisory System

- (i) Project Code : 11035
- (ii) Sanctioned date : 14.10.2009
- Completion date : 2011-12
- Budget (₹ in lakh) : 321.54
- (iii) Consortia P.I. and Lead Institute : Dr Devendra Jalihal
(Name, designation and full address) RTBI-IITM, Chennai
044-22570120, 22574408
rtbiooffice@tenet.res.in

- (iv) Partners:
- TNAU, Coimbatore
 - NAF, Chennai
 - EPFPCL, Erode
 - DPFASL, Dharmapuri
- (v) Website: Under construction
- (vi) Objectives:
1. Multimedia Interface between Mobile Phones and a Central Database
 2. Farm Plot Historian Database System
 3. Market Information Database
 4. Voice based Interactive System
 5. Multi-media Agri-Advisory System
 6. Multi-party Conferencing system between farmers, experts and extension workers.
- (vii) Research Progress:
- The mobile application has been developed for collecting farmer and plot level data
 - The farm plot spatial data collection using GPS device is progress. 358 tracks have been collected so far.
- (viii) The status of the utilization of the budget under this sub-project upto March, 2010 is presented below:

Status of utilization of budget under the sub-project upto March, 2010

(₹ in lakh)

Lead centre/ Co-partners	Total sanctioned budget	Fund released upto March 2010	Fund utilized upto March 2010	Fund utilized to released (%)
RTBI-IITM, Chennai	199.920	11.380	2.790	25
TNAU	84.120	14.200	14.200	100
NAF	12.500	1.640	1.640	100
EPFPCL	12.500	1.640	1.640	100
DPFASL	12.500	1.640	1.640	100
Total	321.540	30.500	21.910	72

18. Sub-project: Innovations in Technology Mediated Learning: An Institutional Capacity Building in using Re-usable Learning Objects in Agro-horticulture

- (i) Project Code : 11038
- (ii) Sanctioned date : 01.04.2010
- Completion date : 31.03.2012
- Budget (₹ in lakh) : 274.95
- (iii) Consortia P.I. and Lead Institute : Dr B.S. Hansra
- (Name, designation and full address) School of Agriculture, IGNOU
New Delhi-110 068
011-29533166, 09899231480
Fax: 011-29533167
baljitsingh54@yahoo.co.in
pkjain@ignou.ac.in

- (iv) Partners:
- YCMOU, Nashik
 - TNAU, Coimbatore
 - ICRISAT, Hyderabad
- (v) Website: Under construction
- (vi) Objectives:
1. To generate, review, manage and publish approved learning materials for wider use and re-use in the Re-usable Learning Objects (RLO) format, by Distance Learning Institutions and interested rural and community organizations and extension agencies, and to build capacity among experts and faculty.
 2. To build a national pilot repository for a digital content on agro-horticulture for easy use in Distance Learning Programs aimed at rural learners and extension workers (principle of just-in-time learning and the practice of self learning format will be emphasized) and to link it with three university-level repositories that compile information on locally derived tips and practices.
 3. To assess impact of new methods of combining ODL, outreach, ICT and extension approaches on rural livelihoods and on partnerships, and to formulate a model to ingrain ODL in enhancing extension outreach
- (vii) Research Progress: Since there is no release till date, Project activities could not be started.

19. Sub-project: Developing, Commissioning, Operating and Managing an online Examination system for NET/ARS-Prelim Exam by ASRB, ICAR

- (i) Project Code : 11041
- (ii) Sanctioned date : 01.04.2010
- Completion date : 31.03.2010
- Budget (₹ in lakh) : 3678.3
- (iii) Consortia P.I. and Lead Institute : Prof. M.J. Modayil
(Name, designation and full address) Member ASRB, Agricultural Scientists
Recruitment Board (ASRB)
Krishi Anusandhan Bhavan I
Pusa, New Delhi 110 012
011-25846730/25843295/25842536/
25841136/25842966
Fax: 011-25842536
asrb.online@gmail.com
- (iv) Partners: No partnership with other Institute
- Indian Agricultural Research Institute, New Delhi
 - National Academy of Agricultural Research and Management, Hyderabad
 - National Dairy Research Institute, Karnal
 - Indian Veterinary Research Institute, Bareilly
 - Central Institute of Fisheries Education, Mumbai

- Central Institute of Cotton Research, Nagpur
- Indian Institute of Sugarcane Research, Lucknow
- Central Institute of Agricultural Engineering, Bhopal
- TN Veterinary & Animal Sc. University, Chennai
- Central Institute of Post-Harvest Engineering & Tech., Ludhiana
- Central Institute of Temperate Horticulture, Srinagar
- Sher-e-Kashmir Univ., Vety College, RS Pura Campus, Jammu
- Central Marine Fisheries Research Institute, Cochin
- Central Arid Zone Research Institute, Jodhpur
- Central Potato Research Institute, Shimla
- Central Inland Fisheries Research Institute, Barrackpore
- Central Institute of Freshwater Aquaculture, Bhubaneshwar
- Central Soil & Water Conservation Res. & Training Instt. Dehradun
- ICAR Research Complex for Eastern Region, Patna
- ICAR Research Complex for NEH, Barapani, Meghalaya,
- Central Agricultural Research Institute, Port Blair
- National Institute of Animal Nutrition & Physiology, Bangalore
- Project Directorate of Medicinal and Aromatic Plants, Anand

(v) Website: Under construction

(vi) Objectives:

1. To develop the infrastructure and capability for changing over from onsite to online Examination for NET/ARS PRELIM
2. To Build, Own and Operate (develop, procure, install, commission, operate, manage) an online Examination system for the NARS at the ASRB with 23 Nodal Centres across the country
3. To develop a large question bank in all the NET/ARS disciplines and to develop the capacity to encrypt, digitize and generate questions from the large database as per needs of the examination.
4. To automate the online registration, validation, hall ticketing, allocation of centres, and result declaration process for Net and ARS
5. To conduct, commencing from 2010, the annual NET/ARS PRELIM through an online examination at 23 Nodal Centres in the Country.
6. To ultimately put in place a National Facility for online examinations for use of not only by ASRB, but also by the ICAR Administration for online Audit and Accounts Examination, Education Division of ICAR for online scholarship and admission examinations and for Staff Recruitment through online testing.

(vii) Research Progress: Since there is no release till date, Project activities could not be started.

20. Sub-project: Zonal Technology Management and BPD Unit at CIRCOT, Mumbai

- (i) Project Code : 12013
- (ii) Sanctioned date : 19.11.2008
 Completion date : 31.03.2012
 Budget (₹ in lakh) : 372.5
- (iii) Consortia P.I. and Lead Institute : Dr N. Shanmugam
 (Name, designation and full address) CIRCOT, Mumbai
 022-24127273, 24157239, 09930353539
 dr.shanmugam@gmail.com
- (iv) Partners: No partnership with other institute
- (v) Website: www.bpdcircot.com
- (vi) Objectives:
1. To accelerate technology development and utilization between ZTM-BPD-CIRCOT and entrepreneurs for commercialization of zonal agri-business technologies
 2. To provide services on marketing assistance, quality evaluation, research and development for business development and help small entrepreneurs for setting up textile testing facility
 3. Networking with relevant R&D, academic and business development institutes
 4. Creating awareness and interest about BPD unit
 5. To enhance marketing potential of the existing commercial testing and consultancy services of CIRCOT and other Zonal Institutes.
 6. To canvass cotton stalk as an alternate raw material to timber in particle board & related industry
 7. To provide specialized services to the SMEs in textile and other sectors in the Zone
- (vii) Research Progress:
- BPD website (ww.bpdcircot.com) is linked to Ahmedabad based B2B portal – fibre 2 fashion to give global visibility of BPD CIRCOT Business website. Currently we have thirty four active enquiries/business leads on different technologies will definitely covert into business in coming days.
 - Negotiations are in progress for developing business on CIRCOT based Nano technology with TATA Chemicals, Pune.
 - ICRISAT and Villgro Team visited ZTM-BPD Unit for building business network and also handholding ZTM-BPD Unit for commercialization of CIRCOT technologies.
 - Six draft MOU's sent to different entrepreneurs for technology transfer.
 - Research Paper titled "Demand Assessment of Agribusiness Technologies of Cotton and its By-products presented at International Conference on Agripreneurship and Rural Development, Banaras Hindu University, Varanasi.
 - A joint Meeting conducted with delegation of M/s Vinitha International, Ethiopia, Director CICR, Nagpur, and BPD Unit for collaboration venture on cultivation and Ginning of cotton in Ethiopia.
- (viii) The status of the utilization of the budget under this sub-project upto March, 2010 is presented below:

Status of utilization of budget under the sub-project upto March, 2010

(₹ in lakh)

Lead centre/ Co-partners	Total sanctioned budget	Fund released upto March 2010	Fund utilized upto March 2010	Fund utilized to released (%)
CIRCOT, Mumbai	372.5	319.7	63.39	19.83
Total	372.5	319.7	63.39	19.83

21. Sub-project: Zonal Technology Management and BPD Unit at IARI, New Delhi

- (i) Project Code : 12015
- (ii) Sanctioned date : 31.12.2008
Completion date : 30.04.2012
Budget (₹ in lakh) : 502.35
- (iii) Consortia P.I. and Lead Institute : Dr Pramod Kumar
(Name, designation and full address) IARI
9910633210; 9818521099
Pramod_iari@Yahoo.co.in
Pramod.iari@gmail.com
- (iv) Partners : No partnership with other institute
- (v) Website : <http://www.iari-ztmbpd.org>
- (vi) Objectives:
1. To identify the potential technologies ready for commercialization and develop into marketable technologies and upscale them into viable agri-business under public-private partnership framework.
 2. To develop a mechanism for transferring technology from IARI to public/private sector using R&D backup of the institute to help entrepreneurs. in commercializing the technologies.
 3. To impart consultancy and training for creating prospective entrepreneurs and value added man power.
 4. To strengthen R&D focus of the institute towards more applied research through backward linkage from industry.
- (vii) Research Progress:
- Developed and hosted the website dedicated to ZTM & BPD unit, IARI, for wider publicity of the technologies and reach for the stakeholders. The brief of the technologies are uploaded.
 - An effort for networking is being done to draw the attention of all the stakeholders. The method being used—personal meeting, workshop, emails, Fax and letters
 - Conducted Four Entrepreneur Development training programme on BGA biofertilizer technology, Microbial biopesticides, Quality seed production in vegetable crops and Molecular Marker Assisted Selection for Crop Improvement.
 - Developed office-cum-lab space in the ZTM& BPD building, Procurement of equipments and establishing the biotech laboratory facility
 - Technical evaluation and Prioritization of IARI Technologies

- Conducted ICAR-ZTM & BPD meeting-cum-workshop 2009–10, North Zone I and compiled IP assests from 21 institutions of the North Zone.
- (viii) The status of the utilization of the budget under this sub-project upto March, 2010 is presented below:

Status of utilization of budget under the sub-project upto March, 2010

(₹ in lakh)

Lead centre/ co-partners	Total sanctioned budget	Fund released upto March 2010	Fund utilized upto March 2010	Fund utilized to released (%)
IARI, New Delhi	502.35	271.040	75.332	28
Total	502.35	271.040	75.332	28

22. Sub-project: Zonal Technology Management and BPD Unit at CIFT, Cochin

- (i) Project Code : 12019
- (ii) Sanctioned date : 20.04.2009
Completion date : 30.06.2012
Budget (₹ in lakh) : 770.69
- (iii) Consortia P.I. and Lead Institute : Shri M. Naseer
(Name, designation and full address) CIFT, Cochin
9446091515
nasser.cift@gmail.com
- (iv) Partners : South Zone ICAR Institutes
- (v) Website : www.agriincubator.com (under refinement)
- (vi) Objectives:
1. To commercialize technologies developed at CIFT as well associating institutes
 2. To help entrepreneurs to commercialize business ideas utilising the R&D back up of the Institutes, with special emphasis to women entrepreneurs.
 3. To provide pilot level production facilities in fisheries to entrepreneurs for test marketing
 4. To design and impart effective training programmes for creating prospective entrepreneurs and value added manpower for target industries
 5. To create technology clinics to help existing businesses
- (vii) Research Progress:
- To commercialize technologies developed at CIFT as well associating institutes
 - To help entrepreneurs to commercialize business ideas utilising the R&D back up of the Institutes, with special emphasis to women entrepreneurs.
 - To provide pilot level production facilities in fisheries to entrepreneurs for test marketing
 - To design and impart effective training programmes for creating prospective entrepreneurs and value added manpower for target industries
 - To create technology clinics to help existing businesses
- (viii) The status of the utilization of the budget under this sub-project upto March, 2010 is presented below:

Status of utilization of budget under the sub-project upto March, 2010

(₹ in lakh)

Lead centre/ Co-partners	Total Sanctioned Budget	Fund Released upto March 2010	Fund Utilized upto March 2010	Fund Utilized to Released (%)
CIFT, Kochi	770.69	214.26	57.48	26.83
Total	770.69	214.26	57.48	26.83

23. Sub-project: Zonal Technology Management and BPD Unit at IVRI, Izzatnagar

- (i) Project Code : 12027
- (ii) Sanctioned date : 12.05.2009
Completion date : 31.03.2012
Budget (₹ in lakh) : 477.332
- (iii) Consortia P.I. and Lead Institute : Dr B. Singh
(Name, designation and full address) IVRI, Izzatnagar
0581-2300207, 09319334633
bsingh@ivri.up.nic.in
- (iv) Partners : No partnership with other institute
- (v) Website : www.ivri.nic.in/ztmbpd
- (vi) Objectives:
The prime objectives of the ZTM-BPD Unit of IVRI are as follows:
1. To stimulate technology development and transfer between BPD-IVRI and entrepreneurs for commercialization of livestock and poultry health and production related technologies.
 2. To act as a catalyst in conversion of naïve original innovative research ideas into commercial ventures.
 3. Technology refinement and upscaling and promoting public private partnerships and start-up companies
- (vii) Research Progress:
- Technology shows (4 nos.) of IVRI technologies and other institutes
 - (a) ISBA 2010 (Participants: Angle investors, corporate houses and entrepreneurs)
 - (b) IARI Kisan Mela (for entrepreneurship development)
 - (c) Bareilly Chambers of Commerce (UP) (Participants: various entrepreneurs and business houses)
 - (d) Technology show of other zonal ICAR institute technologies at ZTM-BPD unit in meeting-cum workshop at IVRI
 - Selection of PPR diagnostic kit technology by International forum “DST-Lockheed Martin India Innovation Growth Program”
 - Profiling and identification of the Technologies
 - Technology Incubator laboratories identification and establishment
 - Networking with other ICAR institutes of North zone II
- (viii) The status of the utilization of the budget under this sub-project upto March, 2010 is presented below:

Status of utilization of budget under the sub-project upto March, 2010

(₹ in lakh)

Lead centre/ Co-partners	Total Sanctioned Budget	Fund released upto March 2010	Fund utilized upto March 2010	Fund utilized to released (%)
IVRI, Izzatnagar	477.332	184.818	17.022	9
Total	477.332	184.818	17.022	9

24. Sub-project: Zonal Technology Management and BPD Unit at NIRJAFT, Kolkata

- (i) Project Code : 12026
- (ii) Sanctioned date : 12.05.2009
Completion date : 31.03.2012
Budget (₹ in lakh) : 415.36
- (iii) Consortia P.I. and Lead Institute : Dr D.Nag
(Name, designation and full address) NIRJAFT, Kolkatta
033-24212115/16/17, 09433389579
dnag_in@yahoo.com
- (iv) Partners : No partnership with other institute
- (v) Website : www.nirjaft.res.in/bpd
- (vi) Objectives:
1. To develop a mechanism for transferring the technologies from NIRJAFT to public/private sector using R&D backup of the institute in commercializing the technologies.
 2. To impart consultancy and training for creating prospective entrepreneurs and value added manpower.
 3. To strengthen R&D focus of the institute towards more applied research through more backward linkage from industries.
- (vii) Research Progress:
- Entrepreneur meet at NIRJAFT
 - Sensitization program in six different places of West Bengal
 - Entrepreneurs started registering
 - Some interested entrepreneurs took training in different technologies, such as, Handmade paper, composite, particle board, advance retting process and handicraft
- (vii) The status of the utilization of the budget under this sub-project upto March, 2010 is presented below:

Status of utilization of budget under the sub-project upto March, 2010

(₹ in lakh)

Lead centre/ Co-partners	Total sanctioned budget	Fund released upto March 2010	Fund utilized upto March 2010	Fund utilized to released (%)
NIRJAFT, Kolkata	415.360	152.740	62.060	41
Total	415.360	152.740	62.060	41

25. Sub-project: Setting up of BPD unit at TNAU, Coimbatore

- (i) Project Code : 12032
- (ii) Sanctioned date : 09.10.2009
Completion date : 08.10.2012
Budget (₹ in lakh) : 234.65
- (iii) Consortia P.I. and Lead Institute : Dr R. Ganeshan
(Name, designation and full address) TNAU, Coimbatore
business@tnau.ac.in
ganesanvpr@gmail.com
0422-6611377, 09442516822
- (iv) Partners : No partnership with other institute
- (v) Website : Under construction
- (vi) Objectives:
1. To commercialize technologies and products developed by the University
 2. To develop and promote entrepreneurship in the region through Agri-Business Incubation by providing incubation support, facilitating successful agro innovations, handholding services, market linkages and testing facilities.
 3. To undertake programs on capacity building with regard to technologies and managerial aspects for establishing agribusiness
 4. To contribute to competitiveness of agribusiness environment and job creation
- (vii) Research Progress:
- Conducted workshop on Quality Seed Production in Paddy on 26th March 2010 for the seed entrepreneurs at Tamil Nadu Rice Research Institute, Aduthurai, Tanjore district, Tamil Nadu
 - Completed the recruitment of Business Manager, senior Research fellow (2 nos), Office Assistant (1 no), skilled labour (2 nos) and Unskilled Labour (2 nos)
 - Completed the procurement of equipments, furniture
 - Started the renovation of existing building for the establishment of BPD unit
 - Generated many enquiries and identified 11 prospective incubatees for the BPD-TNAU. These identified incubatees have shown interest in taking up different Agri-Business ventures. BPD-TNAU has initiated its activities in guiding the entrepreneurs in selecting the suitable venture.
- (viii) The status of the utilization of the budget under this sub-project upto March, 2010 is presented below:

Status of utilization of budget under the sub-project upto March, 2010

(₹ in lakh)

Lead centre/ Co-partners	Total sanctioned budget	Fund released upto March 2010	Fund utilized upto March 2010	Fund utilized to released (%)
TNAU, Coimbatore	234.65	90.905	70.96	78.06
Total	234.65	90.905	70.96	78.06

26. Sub-project: Setting up of BPD unit at AAU, Anand

- (i) Project Code : 12038
- (ii) Sanctioned date : 05.10.2009
Completion date : 31.03.2012
Budget (₹ in lakh) : 247.67
- (iii) Consortia P.I. and Lead Institute : Dr R.V. Vyas
(Name, designation and full address) AAU, Anand
02692-260211/225813, 09924938018
rajababuvyas@gmail.com, rvvyas@aau.in
- (iv) Partners : CCPI from AAU Institutions (no partnership with other institutes).
- (v) Website: www.aau.in
- (vi) Objectives:
1. To accelerate agri-business technologies development and canvassing to private organizations under PPP and creating an agribusiness environment.
 2. To provide services for R&D to potential and existing entrepreneurs for setting up own units with services like consulting, training and advice for contract farming etc.
 3. To promote new technologies on verge of completion, new varieties and hybrids of crops developed at AAU for commercialization
- (vii) Research Progress:
- Continuous basundi making machine
 - Liquid Bio fertilizer technology
 - Tissue culture technology in Date Palm
 - Biodiesel technology
 - Anubhav Seeds
 - Pro biotic cultures for dairy products
 - Area specific mineral mixture for live stock
 - Dietetics frozen desserts (Ice cream)
- (viii) The status of the utilization of the budget under this sub-project upto March, 2010 is presented below:

Status of utilization of budget under the sub-project upto March, 2010

(₹ in lakh)

Lead centre/ Co-partners	Total sanctioned budget	Fund released upto March 2010	Fund utilized upto March 2010	Fund utilized to released (%)
AAU, Anand	247.67	155.75	69.67477	45
Total	247.67	155.75	69.67477	45

27. Sub-project: Setting up of BPD unit at CCSHAU, Hisar

- (i) Project Code : 12033
- (ii) Sanctioned date : 09.10.2010
Completion date : 31.03.2012
Budget (₹ in lakh) : 248.22

SUB-PROJECTS-WISE RESEARCH PROGRESS

- (iii) Consortia P.I. and Lead Institute : Dr R. B. Srivastava
(Name, designation and full address) CCSHAU, Hisar
01662-289444, 09416388650
rb_sri@rediffmail.com, ipr@hau.ernet.in
- (iv) Partners: No partnership with other institute
- (v) Website: Under construction
- (vi) Objectives:
1. To identify the potential technologies ready for commercialization and licensing of technology to private sector, new technology entrepreneurs and start up companies
 2. Development of entrepreneurship and agri business enterprise through training & incubation facilities for young, small and medium size entrepreneurs to promote university's technologies
 3. Promotion of partnership with institutions in public and private sectors in order to develop novel and commercially viable technologies/products and business ideas through backward linkage from industry
 4. Fastening the technology transfer
- (vii) Research Progress:
- Project is in infancy stage. Only one month passed and further activities will be carried out in due course of time
- (viii) The status of the utilization of the budget under this sub-project upto March, 2010 is presented below:

Status of utilization of budget under the sub-project upto March, 2010

(₹ in lakh)

Lead centre/ Co-partners	Total sanctioned budget	Fund released upto March 2010	Fund utilized upto March 2010	Fund utilized to released (%)
CCSHAU, Hisar	248.22	135.365	26.02	19

28. Sub-project: Setting up of BPD unit at JNKVV, Jabalpur

- (i) Project Code : 12031
- (ii) Sanctioned date : 09.10.2009
Completion date : 31.03.2012
Budget (₹ in lakh) : 327.362
- (iii) Consortia P.I. and Lead Institute : Dr S.K. Rao
(Name, designation and full address) JNKVV, Jabalpur
0761-2681021, 09425384072
skrao_jnau@yahoo.co.in
- (iv) Partners: No partnership with other institute
- (v) Website: Under construction
- (vi) Objectives:
1. Promotion of market responsive products and technologies through effective entrepreneurship development for commercialization.

2. Promotion of public private partnership for commercialization of technologies.
 3. Human Resource development for entrepreneurship development and commercialization of technologies.
- (vii) Research Progress:
- The procurement of equipments and machineries and their satisfactory installation has been completed.
 - The production of various schedule, products and technologies for entrepreneurship development will be developed and communicated to the farming community.
 - Co-PI Dr S.B. Nahatkar attended one MSME–Agrotechnology Work Shop at Indore on 12&13th March 2010 and introduced our BPD unit to young entrepreneurs specially interested in production and processing of medicinal & aromatic plants.
 - ‘Buyers-sellers meet on medicinal plants’ was organized with the help of MPCON at JNKVV on 29th March, 2010 and potential entrepreneurs for medicinal plant activities were identified.
- (viii) The status of the utilization of the budget under this sub-project upto March, 2010 is presented below:

Status of utilization of budget under the sub-project upto March, 2010

(₹ in lakh)

Lead centre/ Co-partners	Total sanctioned budget	Fund released upto March 2010	Fund utilized upto March 2010	Fund utilized to Released (%)
JNKVV, Jabalpur	327.362	204.672	16.278	8
Total	327.362	204.672	16.278	8

29. Sub-project: Setting up of BPD unit at BAU, Ranchi

- (i) Project Code : 12037
- (ii) Sanctioned date : 09.10.2009
- Completion date : 31.03.2012
- Budget (₹ in lakh) : 175.51
- (iii) Consortia P.I. and Lead Institute : Dr B.N. Singh
(Name, designation and full address) BAU, Ranchi
0651-2450610, 9431958566
- (iv) Partners: No partnership with other institute
- (v) Website: Under construction
- (vi) Objectives:
1. To develop agri-business enterprise through technology commercialization.
 2. To provide agri-technology consultancy net working with marketing experts.
 3. Capacity building for agri business entrepreneurship to promote technologies which can benefit farmers by following appropriate IPR-guide lines and commercialization procedure.
 4. To assist in getting financial assistance from Bank/Institutions or venture capital funding.

- (vii) Research Progress:
- Establishment of BPD Unit, advertisement and appointment of Staff
 - Launch workshop Conducted on 30th March 2010
- (viii) The status of the utilization of the budget under this sub-project upto March, 2010 is presented below:

Status of utilization of budget under the sub-project upto March, 2010

(₹ in lakh)

Lead centre/ Co-partners	Total sanctioned budget	Fund released upto March 2010	Fund utilized upto March 2010	Fund utilized to released (%)
BAU, Ranchi	175.510	67.260	51.060	76
Total	175.510	67.260	51.060	76

30. Sub-project: Handholding and mentoring of BPD units of NARS

- (i) Project Code : 12034
- (ii) Sanctioned date : 09.10.2009
Completion date : 31.03.2012
Budget (₹ in lakh) : 230.55
- (iii) Consortia P.I. and Lead Institute : Dr Kiran K. sharma
(Name, designation and full address) ICRISAT, Hyderabad
09849548540
k.sharma@cgiar.org
- (iv) Partners: No partnership with other institute
- (v) Website: Under construction
- (vi) Objectives:
The aim of the project is to enhance agri business development and impacts on agriculture through co-business incubation. The key objectives are:
- 1. Infrastructure:** Establish a basic framework for agri business development to commercialize innovative agro technologies and support agri-preneur.
 - 2. Process:** Promote agri business development and enhancement of incubator service through capacity building and communication.
 - 3. Outcome:** Enhance the success rate of the agri business incubators and the startup agri business ventures.
- (vii) Research Progress:
- A PAN India network on Agri Business Incubation created (Network of Indian Agri-Business Incubators-NIABI).
 - One stop solution for agri-preneur needs covering the entire spectrum of agriculture
 - Innovative system of technology commercialization.
 - Only System to facilitate lateral entry of Innovation and market oriented research in agriculture.
 - India leading Globally with maximum number of Agri-Business Incubators through this initiative.

(viii) The status of the utilization of the budget under this sub-project upto March, 2010 is presented below:

Status of utilization of budget under the sub-project upto March, 2010

(₹ in lakh)

Lead centre/ Co-partners	Total sanctioned budget	Fund released upto March 2010	Fund utilized upto March 2010	Fund utilized to released (%)
ICRISAT,Hyderabad	230.550	87.140	27.180	31
Total	230.550	87.140	27.180	31

31. Sub-project: Learning and capacity building

- (i) Project Code : 13006
- (ii) Sanctioned date : 17.12.2007
Completion date : 12.03.2012
Budget (₹ in lakh) : 5526.446
- (iii) Consortia P.I. and Lead Institute : Dr N.H. Rao
(Name, designation and full address) NAARM, Hyderabad
040-245841333, 9246577262
nhrao@naarm.ernet.in
nhrao_naarm@yahoo.co.in
- (iv) Partners:
- Indian Institute of Management (IIM) Lucknow
 - National Institute of Rural Development, (NIRD), Hyderabad
 - National Institute of Agricultural Extension Management (MANAGE), Hyderabad
- (v) Website: <http://www.naarm.ernet.in>
- (vi) Objectives:
1. To carry out an appropriately designed assessment of L&CB needs (both domestic and international) and current L&CB initiatives in NARS for designing HRD strategies and identifying faculty resources and learning models, so as to facilitate the successful transition to NAIS.
 2. To develop skills in research proposal writing to attract funding, and reporting and synthesizing results to meet the expectations of funding agencies and other stakeholders, keeping in view the consortia-based approach to research partnerships envisaged in NAIP.
 3. To design capacity building activities for providing support to policy, and priority setting, monitoring and evaluation (PME) activities of NAIP.
 4. To enhance the skills of stakeholders associated with PME in the use of ICTs for efficient implementation of consortia-based projects.
 5. To enhance the skills of professionals in NARS in information technology-based decision support systems for market and agri-business orientation of research, and sustaining rural livelihoods to accelerate the NARS transition to NAIS.

SUB-PROJECTS-WISE RESEARCH PROGRESS

6. To enhance the skills of professionals in NARS in managing public-private research partnerships including governance, intellectual property management, legal and regulatory arrangements, commercialization, biosafety, and assessing social impacts.
7. To enhance the understanding and appreciation of technical and para-scientific staff of NARS to support agricultural activities under NAIP.
8. To build capacity for creating a new pool of leadership in NARS for leading change and institutionalizing a learning organization mode to sustain the transition to NAIS in the long-run.
9. To carry out both pro-active and follow-up research case studies in aspects relevant to all components NAIP to enable design of learning resources and for efficient management and capture of the learning from NAIP, for future sustenance of consortia-based research in NAIS.

(vii) Research Progress:

- Designed and Organized effective course curriculum and resource materials for 25 Management Development Programmes/Training Programmes for 488 participants
- Facilitated research proposal development for nearly all projects accepted by NAIP and provided helpdesk support to address implementation issues.
- Capacity building and facilitation of ITMUs in institutions of ICAR, and BPD units set up under NAIP, for institutionalization of intellectual property management and technology commercialization
- Developed effective e-learning processes and models for capacity building of SAUs and DUs of ICAR in designing and implementing e-learning courses to support NAIP initiatives.
- Designed new programme in agribusiness management for teaching faculty of agribusiness schools in SAUs

(viii) The status of the utilization of the budget under this sub-project upto March, 2010 is presented below:

Status of utilization of budget under the sub-project upto March, 2010

(₹ in lakh)

Lead centre/ Co-partners	Total sanctioned budget	Fund released upto March 2010	Fund utilized upto March 2010	Fund utilized to released (%)
NAARM, Hyderabad	4,990.692	1,140.560	956.940	84
IIM, Lucknow	344.20	235.310	192.900	82
NIRD, Hyderabad	71.800	40.500	40.370	100
MANAGE, Hyderabad	119.750	62.500	56.090	90
Total	5,526.446	1,478.870	1,246.300	84

Sub-Component 1.4: Policy and Gender Analysis, and Visioning

Seven projects have been approved so far and the details are given below:

S.No.	Projects	Implementing organizations	Date of Start	Budget (₹ in million)	Duration
1.	Visioning, Policy Analysis and Gender (V-PAGe)	NCAP, New Delhi+ 5 partners	June, 2007	107.549	5 Years
2.	Assessment of Impact of Climate Change on Water-Energy Nexus in Agriculture Under Canal Irrigation System	IIM, Ahmedabad + 2 partners	January, 2009	31.812	3 Years 6 months
3.	Developing a Decision Support System for Agricultural Commodity Market Outlook	NCAP, New Delhi+ 1 partners	November, 2008	21.607	3 Years 4 months
4.	Human Capital requirement	NAARM, Hyderabad+ 1 partners	April, 2009	12.320	2 years
5.	Establishing and Networking of Agricultural Market Intelligence Centres in India	TNAU, Coimbatore+ 10 partners	April, 2009	61.9915	3 Years
6.	Enabling Small Stakeholders to Improve their Livelihoods and Benefit from Carbon Finance	ICRAF, New Delhi+ 5 partners	May, 2009	58.71	3 Years
7.	Policy and Institutional Options for Inclusive Agricultural Growth	IARI, New Delhi, + 3 partners	October, 2009	15.566	2 years 6 months

32. Sub-project: Visioning, Policy Analysis and Gender (V-PAGe)

- (i) Project Code : 14001
- (ii) Sanctioned date : June 2007
Completion date : 31.03.2012
Budget (₹ in lakh) : 1075.49
- (iii) Consortia P.I. and Lead Institute : National Centre for Agricultural Economics and Policy Research (NCAP)
(Name, designation and full address) New Delhi
- (iv) Partners:
- National Academy of Agricultural Research Management, Hyderabad
 - Indian Agricultural Statistics Research Institute (IASRI), New Delhi
 - Directorate of Research for Women in Agriculture (DRWA), Bhubaneswar
 - YES Bank Limited, New Delhi
 - Agri-watch, New Delhi
 - PME Cells: ICAR Institutions (5); SAUs (10)
- (v) Website: Under construction
- (vi) Objectives:
1. Understand and accelerate the innovation process– role of S&T system
 2. Capacity strengthening and studies on agricultural policy research
 3. Understanding changing roles of the ‘actors’—centre and state systems
 4. Assessing final outcomes and impacts of S&T with a focus on gender issues
 5. Strengthening gender roles in agriculture in general and R&D in particular

SUB-PROJECTS-WISE RESEARCH PROGRESS

(vii) Research Progress:

- Past and current performance of rainfed agriculture documented.
- Characterization of rainfed agriculture done, and different scenarios to visualize rainfed agriculture attempted.
- Studies on hill and dairy sector have been awarded to HPKV and NDRI, respectively
- A total of 600 publications entered in the database with digital library.
- Above 1000 nanotech patents of soil, water, plant and animal disease diagnostics, food processing and packaging done and their access supported through digital library.
- Scientists have benefited accessing digital resources built in the project.
- 20 FOCARS Trainees got orientation and 4 Trainees from ICFAI tech, Hyderabad, attended internship program at NAARM.
- Initial experiments of use of nano-silver for pesticide effects are carried out at the laboratory level.

(viii) The status of the utilization of the budget under this sub-project upto March, 2010 is presented below:

Status of utilization of budget under the sub-project upto March, 2010

(₹ in lakh)

Lead centre/ Co-partners	Total sanctioned budget	Fund released upto March 2010	Fund utilized upto March 2010	Fund utilized to released (%)
NCAP, New Delhi	534.5661	145.220	119.075	82
IASRI, New Delhi	106.7875	55.310	47.683	86
NAARM, Hyderabad	25.16061	22.630	11.890	53
DRWA, Bhubaneshwar	98.98936	32.300	29.313	91
Yes Bank, New Delhi	33.0813	41.120	21.070	51
Agriwatch, New Delhi	14.7378	12.180	12.417	102
NDRI, Karnal	18.714	5.310	1.94144	37
IARI, New Delhi	18.714	5.450	1.924	35
CIFE, Mumbai	18.714	1.932	1.89525	98
CIAE, Bhopal	18.714	6.160	5.270	86
IIHR, Bangalore	18.939	NA	2.193	
TNAU, Coimbatore	18.714	4.620	2.740	59
UAS,Dharwad	18.714	5.860	6.031	103
PDKV, Akola	18.142	3.070	3.937	128
JAU, Gujrat	18.142	4.070	2.300	57
CCSHAU,Haryana	18.714	3.440	3.097	90
CSKVV, Palampur	18.142	3.867	3.151	81
GBPUA&T,Pantnagar	18.714	NA	NA	
SKUAST, Srinagar	18.142	4.851	3.479	72
RAU, Bikaner	18.142	4.880	NA	
Total	1075.49	360.337	275.571	76

33. Sub-project: Assessment of Impact of Climate Change on Water-Energy Nexus in Agriculture under Canal Irrigation System

- (i) Project Code : 14017
- (ii) Sanctioned date : 31.12.2008
 Completion date : 31.03.2012
 Budget (₹ in lakh) : 318.12
- (iii) Consortia P.I. and Lead Institute : Prof. Amit Garg: IIM, Ahmedabad
 (Name, designation and full address) 079-66324952, 09428404967
 amitgarg@iimahd.ernet.in
- (iv) Partners:
- Indian Institute of Management Ahmadabad (IIMA)
 - Central Soil & Water Conservation Research and Training Institute (CSWCRTI)
 - INRM Consultants Pvt. Ltd, New Delhi
- (v) Website: Under construction
- (vi) Objectives:
1. Development of Water balance assessment framework and estimation of water availability for two canal irrigation systems in India, incorporating their respective agriculture command areas.
 2. Assessment of existing water demands for agriculture, domestic, industrial, energy and environmental flows for the command area of the two-canal irrigation systems.
 3. Assessment of future water demands for agriculture, domestic, industrial, energy and environmental flows for the command area of the two canal irrigation systems.
 4. Development of an economic impact assessment framework due to climate change for these canal irrigation systems.
 5. Application of energy-economic-environment models to integrate energy and water implications on Indian agriculture at national level.
 6. Incorporating climate change uncertainties under IPCC B2 climate scenario in the above analysis to estimate the policy implications of energy-water nexus for canal irrigation systems.
- (vii) Research Progress:
- A flexible GIS framework for demand assessment has been devised which can be used for assessments of water demands for various present and future scenarios by changing certain inputs.
 - A method of computing crop water requirements has been devised in GIS environment based on the actual crop ET and spatial distribution of various crops at a high resolution of block-level.
 - Frameworks have been created for analysis and linking climate change, water balance, water demand projection, energy use and GHG emissions
 - Assessment of water demands is a dynamic process as it varies spatially and temporally depending upon various driving forces. Capturing temporal variations in water demands is relatively simple, but for spatial variations considerable details are required at a known ground area or boundary. Therefore, in this study, GIS

based framework has been developed to assess water demands in various sectors (agriculture, domestic including livestock and industrial). Analytical methods have straight forward applicability under the climate change scenarios so that present and future estimations have similar framework and variables to be used. Thus, the comparisons of future projections with the present will be scientifically more meaningful, logical and manageable. Demand is a function of price as well as other factors, including the price of substitute goods, and income. Kindler and Russell (1984) point out that domestic or municipal water use is positively correlated to per capita income and inversely correlated to household size. All such changes in future can be suitably analyzed in the GIS framework adopted in this study (depending upon quality of data availability) including water demand adaptations that can be achieved through conservation, improved efficiency, or technological change.

- (viii) The status of the utilization of the budget under this sub-project upto March, 2010 is presented below:

Status of utilization of budget under the sub-project upto March, 2010

(₹ in lakh)

Lead centre/ Co-partners	Total sanctioned budget	Fund released upto March 2010	Fund utilized upto March 2010	Fund utilized to released (%)
IIM, Ahmedabad	168.180	59.750	39.920	67
INRM, New Delhi	100.100	32.233	24.500	76
CSWCRT	49.840	12.860	7.020	55
Total	318.120	104.843	71.440	68

34. Sub-project: Developing a Decision Support System for Agricultural Commodity Market Outlook

- (i) Project Code : 14014
- (ii) Sanctioned date : November, 2008
Completion date : 31.03.2012
Budget (₹ in lakh) : 216.070
- (iii) Consortia P.I. and Lead Institute : Dr Anjani Kumar
(Name, designation and full address): National Centre for Agricultural Economics and Policy Research (NCAP)
011-25847628, 911106918
anjani@ncap.res.in
- (iv) Partners:
• Indian Agricultural Research Institute (IARI)
- (v) Website: <http://www.ncap.res.in/naip/DSSfinal/Home.htm>
- (vi) Objectives:
1. To document and discuss the existing systems for generating commodity outlook information in India.
 2. To review the existing support systems and models used by various countries and institutions/organizations for preparing commodity outlooks.

3. To develop and/or adapt models with technology, producer, consumer and trade core systems to generate short-, and medium term market outlook for selected commodities.
 4. To build a decision support system on the basis of the selected models and suggest technology and policy dimensions to attain the specific goals of price stabilization, supply, income, national and household food nutritional security and consumer and producer welfare.
- (vii) Research Progress:
- National Sample survey data on household level consumption of major commodities for the various rounds processed. This can be used further for analysis of demand.
 - The data pertaining to major variables to be used in developing commodity market outlook model has been collected.
 - Review of literature on global outlook model completed and a review report is prepared.
 - Status report of wheat which covers the aspects of global scenario, domestic production, consumption, demand, supply management system, trade, projections on demand and supply etc is prepared.
- (viii) The status of the utilization of the budget under this sub-project upto March, 2010 is presented below:

Status of utilization of budget under the sub-project upto March, 2010

(₹ in lakh)

Lead centre/ Co-partners	Total sanctioned budget	Fund released upto March 2010	Fund utilized upto March 2010	Fund utilized to released (%)
NCAP, New Delhi	184.100	82.270	42.090	51.00
IARI, New Delhi	31.970	0.000	0.000	0.00
Total	216.070	82.270	42.090	51.00

35. Sub-project: Assessment of future human capital requirements in agriculture and allied sectors

- (i) Project Code : 14020
- (ii) Sanctioned date : 13.03.2009
Completion date : 31.03.2012
Budget (₹ in lakh) : 123.2
- (iii) Consortia P.I. and Lead Institute : Dr D. Rama Rao
(Name, designation and full address) National Academy of Agricultural Research Management, Hyderabad
040-24581334, 09441273700
ramarao@naarm.ernet.in
- (iv) Partners:
- National Academy of Agricultural Research Management, Hyderabad
 - Institute of Applied Manpower Research, New Delhi
- (v) Website: www.naarm.ernet.in www.iamrindia.gov.in

(vi) Objectives:

1. To assess the trend in supply-demand and employment of trained manpower in agriculture and allied sectors
2. To develop a manpower information system for planning trained manpower in agriculture and allied sectors
3. To evaluate institutional set up, interface between agricultural graduates with various stakeholders and the impact of diversification of agriculture on skill requirements
4. To develop a system dynamics model for forecasting and scenario generation of human power requirement and evolve prospective human resource development strategies

(vii) Research Progress:

- Development of tools for nation wide data collection from variety of agri-organisations
- Expert consultation on methodology
- Participatory approach in developing study framework
- Mixed methodology approach is being adopted for data collection.
- Pretesting of all the survey tools before finalisation

(viii) The status of the utilization of the budget under this sub-project upto March, 2010 is presented below:

Status of utilization of budget under the sub-project upto March, 2010

(₹ in lakh)

Lead centre/ Co-partners	Total sanctioned budget	Fund released upto March 2010	Fund utilized upto March 2010	Fund utilized to released (%)
NAARM,Hyderabad	44.100	12.250	12.200	100
IAMR, New Delhi	79.100	22.750	29.470	130
Total	123.200	35.000	41.670	119

36. Sub-project: Establishing and Networking of Agricultural Market Intelligence Centres in India

- (i) Project Code : 14021
- (ii) Sanctioned date : 20.04.2009
Completion date : 31.03.2012
Budget (₹ in lakh) : 619.910
- (iii) Consortia P.I. and Lead Institute : Dr N. Ajjan
(Name, designation and full address) TNAU, Coimbatore
0422-2431405, 09486111708
taudemic@gmail.com

(iv) Partners:

- Kerala Agricultural University, Trichur
- University of Agricultural Sciences, Bangalore
- University of Agricultural Sciences, Dharwad
- Acharya N G Ranga Agricultural University, Hyderabad
- Dr Punjab Rao Desmukh Krishi Vidyapeeth, Akola
- Junagarh Agricultural University, Junagarh

- Punjab Agricultural University, Ludhiana
 - GBPUA&T, Pantnagar, Uttarakhand
 - CCS Haryana Agricultural University, Hissar
 - Maharana Pratap University of Ag. & Tech., Udaipur
- (v) Website: <http://www.jau.in/naip.amic>
- (vi) Objectives:
1. Providing price forecast before sowing and during harvesting of selected farm commodities.
 2. Making available product intelligence.
 3. Providing information on high price markets.
 4. Improving the dissemination of market intelligence.
 5. Increasing the capacity to absorb and use such market intelligence by all stakeholders.
 6. Developing commodity market outlook along with NCAP-NAIP for selected commodities at state level besides providing commodity market research reports.
- (vii) Research Progress:
- Groundnut price forecast did in November, 2009 remained valid throughout period from November 2009 to February 2010. Farmers were advised to sell ground at harvest, saved storage cost and losses
- (viii) The status of the utilization of the budget under this sub-project upto March, 2010 is presented below:

Status of utilization of budget under the sub-project upto March, 2010

(₹ in lakh)

Lead centre/ Co-partners	Total sanctioned budget	Fund released upto March 2010	Fund utilized upto March 2010	Fund utilized to released (%)
TNAU, Coimbatore	116.5440	22.485	22.485	100.00
KAU, Kerala	44.0490	0.00	0.00	0.00
UAS, Bangalore	38.2700	0.00	0.00	0.00
ANGRAU, Hyderabad	78.4020	0.00	0.00	0.00
UAS, Dharwad	44.0490	0.00	0.00	0.00
PDKV, Akola	80.6600	0.00	0.00	0.00
JAU, Junagarh	44.3640	9.727	8.657	89.00
PAU, Ludhiana	46.7690	0.00	0.00	0.00
GBPUAT, Pantnagar	44.1750	0.00	0.00	0.00
CCSHAU, Hisar	38.3640	0.00	0.00	0.00
MPUAT, Udaipur	44.2690	0.00	0.00	0.00
Total	619.910	9.727	9.727	9.727

37. Sub-project: Enabling Small Stakeholders to Improve their Livelihoods and Benefit from Carbon Finance

- (i) Project Code : 14029
- (ii) Sanctioned date : June, 2009
- Completion date : 30.06.2012
- Budget (₹ in lakh) : 587.10

SUB-PROJECTS-WISE RESEARCH PROGRESS

(iii) Consortia P.I. and Lead Institute : Dr V.P. Singh
 (Name, designation and full address) ICRAF, New Delhi
 011-25803800, 25847885, 25847886
 v.p.singh@cgiar.org

(iv) Partners:

- CRIDA, Hyderabad
- OUAT, Bhubaneswar
- MPUAT, Udaipur
- VPKAS, Almora
- OUTREACH, Bangalore

(v) Website: Under construction

(vi) Objectives:

1. To obtain the approval of SMART CDM frame work and validate it, including the tool box in the Indian context in four major ecological settings; semi arid, arid, humid and sub temperate ecologies,
2. To train the India teams of scientists on the use of the above frame work and the tool box for formalizing the carbon trading protocols, including the application writing, validation of applications, etc.
3. To pilot test the small holder carbon trading options in different carbon stock exchanges, markets and other legal tenders, and
4. To develop a generic manual on the application of carbon trading options and scale-up approaches of the validated carbon trading concepts in to other sites in India, particularly for the benefits of small holders under different farming alternatives, resource bases and social situations.

(vii) Research Progress:

- Site characterization frame work developed; common for all sites.
- Participatory characterization methods with the community.
- Simplified CDM AR/RF procedures.
- Carbon finance market analysis with the stakeholders.

(viii) The status of the utilization of the budget under this sub-project upto March, 2010 is presented below:

Status of utilization of budget under the sub-project upto March, 2010

(₹ in lakh)

Lead centre/ Co-partners	Total sanctioned budget	Fund released upto March 2010	Fund utilized upto March 2010	Fund utilized to released (%)
ICRAF, New Delhi	265.360	43.930	3.080	7
CRIDA, Hyderabad	75.250	32.000	30.104	94
MPUAT, Udaipur	60.340	18.060	0.00	0.00
OUAT, Bhubaneshwar	72.340	30.060	7.269	24
VPKAS, Almora	58.840	16.560	9.740	59
OUTREACH, Bangalore	54.970	14.110	11.304	80
Total	587.100	154.720	61.497	40

38. Sub-project: Policy and Institutional Options for Inclusive Agricultural Growth

- (i) Project Code : 14036
- (ii) Sanctioned date : 13.10.2009
Completion date : 31.03.2012
Budget (₹ in lakh) : 155.66
- (iii) Consortia P.I. and Lead Institute : Dr Suresh Pal
(Name, designation and full address) IARI, New Delhi
011-2584 7501, 25842951, 09968217791
spl_eco@iari.res.in
- (iv) Partners:
- Giri Institute of Development Studies, Lucknow
 - Institute for Social and Economic Change, Bangalore
 - Central Research Institute for Dryland Agriculture, Hyderabad
- (v) Website: www.iari.res.in
- (vi) Objectives:
1. Study agricultural growth patterns with a focus on exclusion or slow growth regions, sub-sectors of agriculture
 2. Review government policies for inclusive agricultural growth and associated investment patterns during successive Five Year Plans.
 3. Identify factors associated with differential growth, especially incentives, improved technology, and institutional change (market, credit, agrarian structure etc).
 4. Develop capacity for policy research in the area of inclusive growth by conducting hands-on training programs.
 5. Disseminate research outputs to research managers, policy makers and other stakeholders.
- (vii) Research Progress:
- The project was expected to start in the last quarter of the current financial year but this was delayed due to release of funds.
 - The activities planned for this year were procurement of equipments and recruitment of project staff. This has been largely done by all the project centres.
 - A workshop was also organized on “Inclusive Agricultural Growth in Indian Agriculture” on 31st March 2010. This workshop was attended by project partners and other professional economists.
 - Review of literature and preparation for data compilation is in progress.
- (viii) The status of the utilization of the budget under this sub-project upto March, 2010 is presented below:

Status of utilization of budget under the sub-project upto March, 2010

(₹ in lakh)

Lead centre/ Co-partners	Total sanctioned budget	Fund released upto March 2010	Fund utilized upto March 2010	Fund utilized to released (%)
IARI, New Delhi	77.340	20.850	8.370	40
GIDS, Lucknow	29.820	9.150	6.000	66
ISEC, Bangalore	32.870	9.930	8.370	84
CRIDA, Hyderabad	15.630	3.090	3.080	100
Total	155.660	43.020	25.820	60

Sub-Component 1.5: Remodeling Financial and Procurement System

The following project has been recently approved:

Projects	Implementing organizations	Date of start	Budget (₹ in lakh)	Duration
Financial Management System (FMS)/Management Information System (MIS)	PIU-NAIP +5 partners	October 2009	325.018	2 years 6 months

- All the activities concerning Financial Management (FMS) and Management Information System (MIS) have been brought under one platform
- Officially sanctioned in September, 2009.

39. Sub-project: Implementation of Management Information System (MIS) (including Financial Management System (FMS)) in ICAR

- (i) Project Code : 15040
- (ii) Sanctioned date : 01.04.2010
Completion date : 31.03.2012
Budget (₹ in lakh) : 3,250.18
- (iii) Consortia P.I. and Lead Institute : Shri Devendra Kumar
(Name, designation and full address) Director (Finance)
ICAR/NAIP, KAB-II, PIU-NAIP
New Delhi-110 012
011-25842535
Fax: 011-25842535
devendra@icar.org.in
- (iv) Partners:
- PIU-NAIP
 - NAARM, Hyderabad
 - NDRI, Karnal
 - CIFE, Mumbai
 - CRIJAF, Kolkatta
 - CMFRI, Cochin
- (v) Website: Under construction
- (vi) Objectives:
1. Rollout of FMS of NAIP across 68 consortium partner ICAR Institutes
 2. Development and implementation of MIS (including FMS) and its roll out across all ICAR institutes across India.
 3. Capacity building across all institutes where FMS/MIS is implemented
 4. Centralized data management system across all institutes.
 5. Finally, creating an IT environment in ICAR across all disciplines
- (vii) Research Progress : There is no release till date so there is no progress

40. Sub-project: Establishment of National Agricultural Bio-informatics Grid (NABG) in ICAR

- (i) Project Code : 11042
- (ii) Sanctioned date : 01.04.2010
Completion date : 31.03.2012
Budget (₹ in lakh) : 5,865.86
- (iii) Consortia P.I. and Lead Institute : Dr Anil Rai
(Name, designation and full address) Indian Agricultural Statistics Research
Institute, Library Avenue, Pusa
New Delhi-110 012
011-25843573,
Fax: 011-25841564
anilrai@iasri.res.in; anilrai64@gmail.com
- (iv) Partners:
- NBPGR, New Delhi
 - NBAGR, Karnal
 - NBFGR, Lucknow
 - NBAIM, Mau
 - NBAll, Bangalore
- (v) Website: Under construction
- (vi) Objectives:
1. Development of agricultural bioinformatics grid for the country
 2. Creation of local databases and Bioinformatics Data Warehouse (BinDW) for genomic resources across species
 3. Human resource development in agricultural bioinformatics
 4. Create and promote inter-disciplinary research groups with focus on agricultural bioinformatics
- (vii) Research Progress: There is no release till date so there is no progress

