



FINAL REPORT

National Agricultural Innovation Project
(Indian Council of Agricultural Research)



"DEVELOPING, COMMISSIONING, OPERATING AND MANAGING AN ONLINE SYSTEM FOR NET/ARS - PRELIM EXAMINATION IN ASRB, ICAR"



Agricultural Scientists Recruitment Board
(Indian Council of Agricultural Research)

2014

FINAL REPORT

NATIONAL AGRICULTURAL INNOVATION PROJECT
(INDIAN COUNCIL OF AGRICULTURAL RESEARCH)

“Developing, Commissioning, Operating and Managing an Online System for NET/ARS - Prelim Examination In ASRB, ICAR”



AGRICULTURAL SCIENTISTS RECRUITMENT BOARD
(INDIAN COUNCIL OF AGRICULTURAL RESEARCH)

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2. Data Centre (DC) at ASRB, New Delhi

Back cover page photograph : Inauguration of First-Online Examination for NET-2014(I).

Foreword

I have the pleasure to forward the Final Report of the Sub project of National Agricultural Innovation Project (NAIP) on "DEVELOPING, COMMISSIONING, OPERATING AND MANAGING AN ONLINE SYSTEM FOR NET/ARS - PRELIM EXAMINATION IN ASRB, ICAR" at Agricultural Scientists Recruitment Board (ASRB). The successful commissioning of online examination system network of 23 examination centers at ICAR institutes and SAUs across the country for conducting NET and ARS preliminary examinations has entirely transformed ASRB examination system. ICAR has possibly become the first public sector to have its own complete infrastructure including hardware and software for conducting online examination. Flawless conduct of the first online examination for NET-2014(1) under the project, from 26th March to 4th April, 2014 at 23 examination centers across the country has been a great success of the project. The online examination has brought the transparency, accuracy, and efficiency in the examination system. The automation of registration process, generating and issuing of admit cards, conduct of examinations and result declarations has saved significant amount of manpower, time and cost in application and result processing. Moreover, the online submission of applications is convenient to candidates for applying from different parts of the country as well as submission of examination fees in real time, without worrying about missing deadlines. The infrastructure developed under the project is a national facility for conducting online examinations and can be used for conducting other examinations by ICAR. I wish the project team all the best for future endeavors.



Dr. Gurbachan Singh
Chairman, ASRB and Consortium Leader (CL)

Preface

Agricultural Scientists Recruitment Board (ASRB) is a premier recruitment agency for recruitment to scientific and other category posts in the Agricultural Research Service (ARS) of the ICAR and to such other posts and services that the President, ICAR, may specify from time to time. ASRB is presently conducting National Eligibility Test (NET) for recruitment of faculty in SAUs twice in a year and ARS preliminary and main examination once in a year for recruitment of scientists in ICAR. Both NET and ARS preliminary exams are being conducted in 55 disciplines of agricultural science. ASRB has taken a lead in transforming from pen and paper examination to computer based test for NET and ARS (Preliminary) examinations with objectives to bring efficiency, accuracy, fairness, and to improve the overall quality of examination system. For conducting computer based test, a network of 23 Examination Centers at ICAR/ SAUs and Data Centre (DC) at ASRB, well equipped with the state of the art hardware and software tools has been established under the project.

Software modules have been developed/ customized as per the requirement of ASRB for submission of online applications, payment of fees, generating and downloading admit cards, test administration, result declaration for NET & ARS examinations. Software for creating a question bank and generating question papers using the question bank has also been developed. Approximately 72000 questions have been digitized in 55 disciplines of agricultural sciences. The entire examination system has been audited by the third party auditors to ensure the quality and security of the system developed. The nodal officers and technical staff of the examination centers have been trained on the process of online examination through appropriate training programs.

The first complete online examination was conducted successfully for NET-2014(1) from 26th March, 2014 to 4th April, 2014, for which the online registration process was started in the month of February, 2014. A total of 18245 candidates applied online for the NET-2014(1), among which only 14178 (77.7%) candidates actually appeared in the online examination.

I would like to extend my gratitude to Dr S. Ayyappan, Secretary DARE & Director General ICAR and Secretary, ICAR for providing the necessary support as and when required for executing the sub-project.

I would also like to thank all the distinguished members of PIU-NAIP for providing the much needed cooperation and guidance in carrying out the project activities, particularly Dr D. Rama Rao, National Director, NAIP, Dr. Bangali Babu former National Director, NAIP and Dr P. S. Pandey, National Coordinator (Component-1), NAIP.

I thank Dr. Gurbachan Singh, Chairman, ASRB, and the Consortium Leader of the project for his keen interest, whole hearted support, appropriate advice and encouragement. I would also like to thank my colleague, Dr. V. N. Sharda, Member, ASRB and Sri N. S. Randhawa, Secretary, ASRB and Sri M. K. Jain, Controller of Examination for their help and cooperation in implementing the project, particularly for providing the logistic support. I need to make special mention of the entire Project Team Lead by Dr. A. P. Ruhil, Principal Scientist and Co-CPI and the entire team of Controller of Examination - I section lead by Sri P. K. Jain for their untiring efforts, constant monitoring, documenting, and improvising in making this project a successful endeavor at the end. The special efforts made by the General Administration Section and Assistant Finance and Accounts Officer for success of this project is also acknowledged.

Last but not least I wish to record that without the active support and cooperation of the Cooperating Centre partners (i.e., CCPIs) in 23 Institutions, where the actual examinations happened, the project could not have succeeded.



Dr. S.K. Bandyopadhyay
Member, ASRB and Consortium Principal Investigator (CPI)

Abbreviations and Acronyms

ARS	Agricultural Research Services
ASP.NET	Active Server Pages .Network Enabled Technologies
ASRB	Agricultural Scientists Recruitment Board
AV	Anti Virus
BSNL	Bharat Sanchar Nigam Limited
CARI	Central Agricultural Research Institute
CAZRI	Central Arid Zone Research Institute
CBT	Computer Based Test
CCPI	Consortium Co-Principal Investigator
CDC	Consultancy Development Centre
CeRA	Consortium for e-Resources in Agriculture
CIAE	Central Institute of Agricultural Engineering
CICR	Central Institute for Cotton Research
CIFA	Central Institute of Freshwater Aquaculture
CIFE	Central Institute of Fisheries Education
CIFRI	Central Inland Fisheries Research Institute
CIPHET	Central Institute of Post-Harvest Engineering and Technology
CITH	Central Institute of Temperate Horticulture
CL	Consortium Leader
CMFRI	Central Marine Fisheries Research Institute
CPI	Consortium Principal Investigator
CPRI	Central Potato Research Institute
CSRCRTI	Central Soil and Water Conservation Research and Training Institute
DC	Data Centre
DMAPR	Directorate of Medicinal and Aromatic Plants Research
DR	Disaster Recovery
EMS	Enterprise Management System
EOI	Expression of Interest
HIPS	Host Intrusion Prevention System
IARI	Indian Agricultural Research Institute
ICAR	Indian Council of Agricultural Research
ICAR RC NEH	ICAR Research Complex for North East Hills
ICT	Information and Communications Technology
IISR	Indian Institute of Sugarcane Research
ISP	Internet Service Provider
IT	Information Technology
IVRI	Indian Veterinary Research Institute

LAN	Local Area Network
LDAP	Lightweight Directory Access Protocol
LMS	Learning Management System
Mbps	Megabits Per Second
MIS	Management Information System
MTNL	Mahanagar Telephone Nigam Limited
NAARM	National Academy of Agricultural Research Management
NAIP	National Agricultural Innovative Project
NARS	National Agricultural Research System
NDRI	National Dairy Research Institute
NET	National Eligibility Test
NIANP	National Institute of Animal Nutrition & Physiology
NIPS	Network Intrusion Prevention System
NOEC	National Online Examination Center
Prelim	Preliminary
QB	Question Bank
QP	Question Paper
RA	Research Associate
RFP	Request for Proposal
SAN	Storage Area Network
SAU	State Agricultural University
SKUAST	Sher-e-Kashmir University of Agricultural Sciences & Technology
SOP	Standard Operating Procedure
SQL	Structured Query Language
SRF	Senior Research Fellow
TANUVAS	Tamil Nadu Veterinary and Animal Sciences University
UPS	Uninterruptible Power Supply
VB.NET	Visual Basic .Network Enabled Technologies

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सारांश

कृषि वैज्ञानिक चयन मंडल, भा.कृ.अनु.प. में नेट/एआरएस प्रारम्भिक परीक्षा हेतु ऑनलाईन प्रणाली का विकास, स्थापना, परिचालन एवं प्रबंधन नामक एक उप-परियोजना (उप-परियोजना कोड 103816) 31 मार्च 2010 से 31 मार्च 2012 तक की अवधि के लिए स्वीकृत किया गया जिसका कुल बजट प्रावधान ₹ 3050.00 लाख था तथा उप-परियोजना में मुख्य कंसार्टियम लीडर के रूप में कृ.वै.च.मं., नई दिल्ली एवं कंसार्टियम पार्टनर के रूप में परिषद के 21 संस्थान व 2 राज्य कृषि विश्वविद्यालय कार्यरत हैं। इसके पश्चात परियोजना की अवधि को 31 मार्च, 2014 तक बढ़ाकर बजट प्रावधान ₹ 3710.50 लाख कर दिया गया। तत्पश्चात ऑनलाईन परीक्षा आयोजन हेतु अवधि को 30 जून, 2014 तक बढ़ाया गया है। उप परियोजना के मुख्य उद्देश्य हैं – 1. ढांचागत सुविधाओं का निर्माण एवं नेट/एआरएस प्रारम्भिक परीक्षा को ऑनसाइट से ऑनलाईन परीक्षा के रूप में बदलने हेतु दक्षता विकसित करना। 2. राष्ट्रीय कृषि अनुसंधान प्रणाली हेतु कृ.वै.च.मं तथा देश के 23 नॉडल केन्द्रों में ऑनलाईन परीक्षा प्रणाली का निर्माण, स्वामित्वता तथा परिचालन (विकास, खरीद, स्थापना, प्रवर्तन में लाना, परिचालन एवं प्रबंधन) जिसके अंतर्गत स्वचालित ऑनलाईन पंजीकरण, वैधीकरण, प्रवेश पत्र जारी करना, परीक्षा केन्द्रों का आवंटन तथा नेट/एआरएस प्रारम्भिक परीक्षा के परिणामों को घोषित करने की प्रक्रिया उपलब्ध हो। 3. नेट/एआरएस के विभिन्न विषयों के लिए क्वेश्चन बैंक विकसित करना। 4. देश के 23 नॉडल केन्द्रों में वार्षिक नेट/एआरएस प्रारम्भिक परीक्षाओं का आयोजन करना। 5. अन्ततः राष्ट्रीय ऑनलाईन परीक्षा की सुविधा न केवल कृ.वै.च.मं. हेतु बल्कि भा.कृ.अनु.प. को ऑनलाईन आडिट एण्ड एकाउंट्स परीक्षा, परिषद के शिक्षा प्रभाग को ऑनलाईन स्कालरशिप एवं प्रवेश परीक्षा एवं ऑनलाईन टेस्टिंग द्वारा स्टाफ नियुक्ति हेतु उपलब्ध कराना।

उद्देश्यवार उपलब्धियां इस प्रकार हैं – 1. भारतीय कृषि अनुसंधान परिषद के 21 संस्थानों एवं 2 राज्य कृषि विश्वविद्यालयों में ऑनलाईन परीक्षा केन्द्रों की स्थापना की गई। इन परीक्षा केन्द्रों को सर्वर, डेस्कटॉप, एलएएन, फर्नीचर, पॉवर बैंक अप तथा एयर कंडीशनर आदि सुविधाएं दी गई। प्रत्येक केन्द्र में कम्प्यूटरों की संख्या 20 से 120 के बीच रखी गयी है। परीक्षा केन्द्रों के नॉडल अफसरों एवं तकनीकी कार्मिकों को ऑनलाईन परीक्षा प्रणाली की जानकारी देने हेतु कृ.वै.च.मं., नई दिल्ली में एक प्रशिक्षण कार्यक्रम आयोजित किया गया। 2. परियोजना के तहत ऑनलाईन परीक्षा नेटवर्क स्थापित करने के लिए हार्डवेयर एवं साफ्टवेयर सोल्यूशनस् की आपूर्ति, स्थापना, तथा सफलतापूर्वक चालू करने हेतु एनएआईपी दिशा निर्देशों के अनुसार एक आउटसोर्स एजेन्सी मेसर्स वयम टेक्नालॉजिस लिमिटेड का चयन किया गया। सभी 23 ऑनलाईन परीक्षा केन्द्रों में ऑनलाईन परीक्षा आयोजन हेतु आवश्यक हार्डवेयर एवं साफ्टवेयर की खरीद, आपूर्ति एवं स्थापना की गई। ऑनलाईन परीक्षा गतिविधियों को नियंत्रित करने हेतु कृ.वै.च.मं. में आधुनिक उपकरणों से लैस डाटा सेन्टर (डीसी) तथा डिसास्टर रिकवरी साइट (डीआर) भी स्थापित किया गया। कृ.वै.च.मं. की

आवश्यकताओं के अनुसार आउटसोर्स एजेन्सी ने ऑनलाईन पंजीकरण, शुल्क भुगतान, प्रवेश पत्रों को तैयार कर जारी करने, केन्द्र आंक्टि करने तथा परिणाम घोषित करने हेतु आवश्यक साफ्टवेयर को विशिष्ट रूप से विकसित किया। नेट/एआरएस परीक्षाओं के लिए टेस्ट एडमिनिस्ट्रेशन साफ्टवेयर निर्मित किया गया। 3. कृ.वै.च.मं. की आवश्यकताओं के अनुसार क्वेश्चन बैंक निर्माण के लिए साफ्टवेयर में संशोधन किया गया। एआरएस/नेट परीक्षाओं के लिए 55 विषय विशेष क्षेत्रों में लगभग बहत्तर हजार प्रश्नों का क्वेश्चन बैंक तैयार किया गया। क्वेश्चन बैंक से प्रश्न पत्रों को तैयार करने हेतु साफ्टवेयर मॉड्यूल विकसित किया गया। 4. परियोजना के तहत विशिष्ट रूप से निर्मित एवं आपूर्ति की गई साफ्टवेयर एवं हार्डवेयर का परीक्षण ऑनलाईन पंजीकरण, शुल्क भुगतान, प्रवेश पत्रों को तैयार कर जारी करने तथा नेट-2013 एवं एआरएस-2013 के परीक्षा परिणामों को घोषित करने में किया गया। यद्यपि वास्तविक परीक्षाओं का आयोजन कागजों पर परम्परागत पद्धतियों से किया गया। प्रथम ऑनलाईन परीक्षा नेट-2014(1) 26 मार्च, 2014 से 4 अप्रैल, 2014 के दौरान आयोजित किया गया। इस परीक्षा में कुल 18245 आवेदकों ने आवेदन किया और 14178 (77.71%) आवेदक परीक्षा में उपस्थित हुए। यह परीक्षा ऑनसाईट पेपर एग्जाम से ऑनलाईन परीक्षा में पूर्ण परिवर्तन है। 5. परियोजना के तहत स्थापित राष्ट्रीय ऑनलाईन परीक्षा प्रणाली का परीक्षण नेट-2014(1) में सफलतापूर्वक किया गया। अब इस प्रणाली का उपयोग न केवल कृ.वै.च.मं. बल्कि भा.कृ.अनु.प. द्वारा आयोजित अन्य परीक्षाओं के लिए भी उपयोग किया जा सकता है। परन्तु प्रत्येक परीक्षा के लिए आवश्यकतानुसार विशेष साफ्टवेयर एवं परीक्षा के प्रकार के अनुसार विशेष क्वेश्चन बैंक की जरूरत होगी।

परीक्षा केन्द्रों में तकनीकी कार्मिकों को क्षेत्रीय स्तर पर ऑनलाईन परीक्षा की सम्पूर्ण प्रक्रिया संबंधी प्रशिक्षण दिया गया। उप-परियोजना के अंतर्गत मुख्य तकनीकी नवीनताएं निम्नवत् हैं – पूरे भारत के 23 परीक्षा केन्द्रों में ऑनलाईन परीक्षा के लिए आवश्यक मौलिक सुविधाओं को स्थापित करना, क्वेश्चन बैंक को डिजिटिज करने हेतु विशिष्ट साफ्टवेयर विकसित करना, क्वेश्चन बैंक से प्रश्न पत्र तैयार करना, नेट/एआरएस प्रारम्भिक परीक्षाओं के लिए इलेक्ट्रानिक पेमेंट गेटवे सहित ऑनलाईन पंजीकरण, ऑनलाईन प्रवेश पत्र तैयार कर जारी करना, टेस्ट एडमिनिस्ट्रेशन साफ्टवेयर, ऑनलाईन परीक्षा प्रणाली को समझने के लिए लर्निंग मैनेजमेंट सिस्टम।

प्रथम ऑनलाईन परीक्षा आयोजन से पूर्व एप्लीकेशन साफ्टवेयर की गुणवत्ता एवं प्रणाली में सुरक्षा सुनिश्चित करने हेतु हार्डवेयर एवं साफ्टवेयर सहित सम्पूर्ण ऑनलाईन परीक्षा प्रणाली का आडिट मेसर्स केपीएमजी द्वारा किया गया।

dh&oMZ: ऑनलाईन परीक्षा प्रणाली, क्वेश्चन बैंक, ऑनलाईन पंजीकरण।



Executive Summary

The sub-project "Developing, Commissioning, Operating and Managing an online system for NET/ARS - Prelim Examination in ASRB, ICAR", (Sub-project Code: 103816) was sanctioned from March 31st, 2010 to March 31st, 2012 for a total budget of ₹ 3050.00 lakhs with ASRB, New Delhi as consortium leader and 21 ICAR institutes and 2 SAUs as consortium partners. Later on the project was given the extension up to March 31st, 2014 with revised sanction of total budget of ₹ 3710.50 lakhs. Further, the project was given the extension upto June 30th, 2014 for conducting the online examination. The major objectives of the sub-project were: 1) To develop the infrastructure and capability to change 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 ASRB with 23 Nodal Centers across the country including to automate the online registration, validation, hall ticketing, allocation of centers, and result declaration process for NET and ARS; 3) To develop a question bank in all the NET/ARS disciplines; 4) To conduct the annual NET/ARS (Preliminary) through an online examination at 23 Nodal Centers in the Country; 5) To ultimately put in place a National Facility for online examinations for use of not only by ASRB, but also by ICAR Administration for online Audit and Accounts Examination, Education Division of ICAR for online scholarship and admission examination and for Staff Recruitment through online testing.

The objective-wise achievements are: 1) Online examination centers have been created at 21 ICAR institutes and 2 SAUs. These examination centers are well equipped with servers, desktops, LAN, furniture, power backups and AC Units. The number of computers varies between 20 to 120 at each centre. A training program was organized at ASRB, New Delhi to train the nodal officers and technical staff to get acquainted with the online examination system. 2) An outsourced agency M/s Vayam Technologies Limited, New Delhi, has been selected as per NAIP guidelines for supplying, installation, and successful commissioning of hardware and software solutions for establishment of the online examination network under the project. The necessary hardware and software for the conduct of online exam has been procured, supplied and installed at 23 online examination centers. The Data Center (DC) and the Disaster Recovery (DR) site, well equipped with the state of the art equipment, have been created at ASRB to control the activities of online examination. The software for online registration, fee payment, generating and issuing admit cards, center allocation and result declaration has been developed and customized as per the requirements of ASRB by the outsourced agency. Test administration software has also been tailored for NET/ARS examinations. 3) The software for creating question bank has been modified to meet the ASRB requirement.

A question bank of approximate seventy two thousand questions covering 55 disciplines of ARS/NET has been created. The software module for generating question papers from the question bank has also been developed. 4) The software and hardware supplied/ customized under the project has already been tested for online registration, fee payment, generating and issuing admit cards, and declaration of result for the NET- 2013 and ARS-2013. However, the actual examinations were conducted on paper as per the conventional method. The first online exam for NET-2014(1) was conducted from 26th March, 2014 to 4th April, 2014. A total of 18245 applicants applied and 14178 (77.71%) applicants actually appeared in the examination. This examination was the first complete transformation from on-site paper examination to online examination. 5) The national facility created under the project for conducting online examinations has been tested successfully by conducting the first online examination for NET-2014(1) and now can be used not only by ASRB but also for other examinations conducted by ICAR. However, each such test would require specific software to be designed as per requirement and a separate question bank specific to a particular type of test will be required.

A field level training of the technical staff was also organized at their respective examination centers demonstrating the complete process of conducting online examination. Major technological innovations under the sub-project are creation of infrastructure of 23 examination centers across India; development/ customization of software for digitizing question bank, generating question papers from question bank, registration of online applications for NET and ARS (Preliminary) examinations including electronic payment gateway, generation and issuance of online admit card generation at the applicant end, test administration software; Learning Management System (LMS) to familiarize with online examination system.

The entire online examination system including hardware and software has been audited by M/s KPMG to ensure the quality of the application software developed and security of the system before conducting the first online examination.

Key words: Online examination system, Question bank, Online registration



Part-I: General Information of Sub-project

1	Title of the sub-project	: Developing, Commissioning, Operating & Managing an Online System for NET/ARS Prelim Examination in ASRB, ICAR
2	Sub-project code	: 103816
3	Component	: I (The ICAR as the catalyzing agent for the management of change in the Indian NARS)
4	Date of sanction of sub-project	: 31-03-2010
5	Date of completion	: 30-06-2014
6	Extension if granted, from - to	: 31-03-2012 to 30-06-2014
7	Total sanctioned amount for the sub-project:	₹ 3710.50000 Lakhs
8	Total expenditure of the sub-project	: ₹ 2791.45468 Lakhs (up to 30 th June, 2014)
9	Consortium leader	: Dr. Gurbachan Singh, Chairman, Agricultural Scientists Recruitment Board (ASRB), Krishi Anusandhan Bhawan -I, Pusa, New Delhi -110 012, Phone : 25843295, 25841272 Fax: 25846540 E-mail : chairman@asrb.org.in, gurbachansingh@icar.org.in Website:www.asrb.org.in

1. List of consortium partners

	Name of CPI/ CCPI with designation	Name of organization and address, phone & fax, email	Duration (From-To)	Budget (₹ Lakhs)
CPI	1. Dr. M.J. Modayil, Member, ASRB (up to March 2012) 2. Dr. S.K. Bandyopadhyay, Member, ASRB (From May, 2012)	Agricultural Scientists Recruitment Board (ASRB) Krishi Anusandhan Bhawan -I, Pusa, New Delhi -110 012, Phone:- 25843295, 25841272 Fax:- 25846540 E-mail:-chairman@asrb.org.in, gurbachansingh@icar.org.in Website:- www.asrb.org.in	31-03-2010 to 30-06-2014	2571.68771

	Name of CPI/ CCPI with designation	Name of organization and address, phone & fax, email	Duration (From-To)	Budget (₹ Lakhs)
CCPI 1	Dr. H.S. Gupta, Director	Indian Agricultural Research Institute (IARI) Pusa, New Delhi - 110 012, director@iari.res.in, Phone:011-25843375, Fax: 011-25846420	31-03-2010 to 30-06-2014	59.55000
CCPI 2	Dr. S. L. Goswami, Director	National Academy of Agricultural Research Management (NAARM) Rajendranagar, Hyderabad - 500407, Andhra Pradesh director@naarm.ernet.in, Phone: 040-24015070, 24581350 Fax: 040-24015912	31-03-2010 to 30-06-2014	61.52148
CCPI 3	Dr. A. K. Srivastava, Director	National Dairy Research Institute (NDRI) Karnal - 132 001, Haryana, dir@ndri.res.in, Phone: 0184 -2252800, 2259002 Fax: 0184-2250042	31-03-2010 to 30-06-2014	35.99621
CCPI 4	Dr. R. K. Singh, Director	Indian Veterinary Research Institute (IVRI) Izatnagar- 243122, Bareilly, UP, dirivri@ivri.up.nic.in, Phone: 0581-2300096, 2310195 Fax: 0581-2303284	31-03-2010 to 30-06-2014	59.55000
CCPI 5	Dr. W. S. Lakra, Director	Central Institute of Fisheries Education (CIFE) Panch Marg, Off Yari Road, Versova, Andheri (West), Mumbai - 400 061, Maharashtra coe.cife@rediffmail.com, coe@cife.edu.in, Phone: 022-26363404, Fax: 022-26361573	31-03-2010 to 30-06-2014	60.55000
CCPI 6	Dr. P. Manivel, Director (Acting)	Directorate of Medicinal and Aromatic Plants Research (DMAPR), Boriavi - 387310, Anand, Gujarat director.dmapr@gmail.com Phone: 02692-271602 Fax: 02692-271601	31-03-2010 to 30-06-2014	54.45000
CCPI 7	Dr. Sushil Solomon, Director	Indian Institute of Sugarcane Research (IISR) Raebareli Road, P.O- Dilkusha, Lucknow - 226 002, UP iisrko@sancharnet.in, Phone: 0522-2480726 Fax: 0522-2480738	31-03-2010 to 30-06-2014	54.65495
CCPI 8	Dr. Pitam Chandra, Director	Central Institute of Agricultural Engineering (CIAE) Nabi Bagh, Berasia, Road, Bhopal - 462038, Madhya Pradesh director@ciae.res.in Phone: 2521001, 2733226 Fax: 0-755-2734016	31-03-2010 to 30-06-2014	53.42970



	Name of CPI/ CCPI with designation	Name of organization and address, phone & fax, email	Duration (From-To)	Budget (₹ Lakhs)
CCPI 9	Dr. S. A. Asokan, Dean	Tamilnadu Veterinary Animal Sciences University (TANUVAS), Madhavaram Milk Colony, Chennai - 600 051, Tamil Nadu deanmvc@tanuvas.org.in, Phone: 044-25360506 Fax: 044-25362787	31-03-2010 to 30-06-2014	55.47409
CCPI 10	Dr. A. P. Sharma, Director	Central Inland Fisheries Research Institute (CIFRI) Barrackpore Branch, Kolkata -700120, West Bengal cifri@vsnl.com, director@cifri.ernet.in, Phone: 033-25920177, 25450998 Fax: 033-25920388	31-03-2010 to 30-06-2014	51.20000
CCPI 11	Dr. P. Jayashankar, Director	Central Institute of Freshwater Aquaculture (CIFA) Kausalyaganga, Bhubaneswar-751 002, Odisha cifa@ori.nic.in, Phone: 0674-2465421, 2465446, 2465402 Fax: 0674-2465407	31-03-2010 to 30-06-2014	50.40000
CCPI 12	Dr. P. K. Mishra, Director	Central Soil and Water Conservation Research and Training Institute (CSWCRTI) 218, Kaulagarh Road, Dehradun - 248 195, UP director@cswcetid.org, Phone: 0135-2758564 Fax: 0135-2754213, 2755386	31-03-2010 to 30-06-2014	55.36972
CCPI 13	Dr. S. V. Ngachan, Director	ICAR Research Complex for NEH Region, Umroi Road, Umiam, Barapani, Meghalaya svngachan@rediffmail.com, director@icarneh.ernet.in Phone: 0364-2570257 Fax: 0364-2570355	31-03-2010 to 30-06-2014	52.95000
CCPI 14	Dr. C. S. Prasad, Director	National Institute of Animal Nutrition & Physiology (NIANP) Hosur Road, Adugodi, Bangalore- 560038, Karnataka directorniap@gmail.com, cadaba_prasad@yahoo.co.in, Phone: 080-25711303, 2570 2539 Fax: 080-25711420	31-03-2010 to 30-06-2014	54.45000
CCPI 15	Dr. A. Gopalkrishnan, Director	Central Marine Fisheries Research Institute (CMFRI), PB No. 1603, Marine Drive North Extension, Ernakulam North, Cochin-682 018, Kerala director@cmfri.org.in, gsydarao@gmail.com, Phone: 0484-2394798; Fax: 0484-2934909, 2396685	31-03-2010 to 30-06-2014	51.90261

	Name of CPI/ CCPI with designation	Name of organization and address, phone & fax, email	Duration (From-To)	Budget (₹ Lakhs)
CCPI 16	Dr. M. M. Roy, Director	Central Arid Zone Research Institute (CAZRI) Jodhpur - 342 003, Rajasthan mmroyster@gmail.com, Phone: 0291-2786584 Fax: 0291-2788706	31-03-2010 to 30-06-2014	54.45000
CCPI 17	Dr. B. P. Singh, Director	Central Potato Research Institute (CPRI) Shimla - 171 001, HP dircpri@sancharnet.in, Phone:0177-2625073, 2625930 Fax: 0177-2624460	31-03-2010 to 30-06-2014	37.70000
CCPI 18	Dr. R. K. Gupta Director	Central Institute of Post-Harvest Engineering and Technology (CIPHET) P.A.U. Campus, Ludhiana- 141004, Punjab ciphnet@sify.com, ciphnet.director@gmail.com, Phone: 0161-2305674 Fax: 0161-2308670	31-03-2010 to 30-06-2014	39.07106
CCPI 19	Dr. Nazeer Ahmed, Director	Central Institute of Temperate Horticulture (CITH), Old Airport Road, Rangreth, Srinagar-190007, J&K cith@hub.nic.in, dnak59@rediffmail.com, Phone: 0194-2305044 Fax: 0194-2305045	31-03-2010 to 30-06-2014	38.22894
CCPI 20	Dr. S. K. Gupta, Dean	Faculty of Veterinary Sciences & Animal Husbandry, SKUAST-J, R.S. Pura, Jammu- 181 102, J&K deanvety@skuast.org, Phone: 01923-250639 Fax: 01923-250639	31-03-2010 to 30-06-2014	38.73944
CCPI 21	Dr. B.P. Bhatt, Director	ICAR Res. Comp. for ER, ICAR Parisar, P.O. B.V.C. Campus, Patna - 800 014, Bihar drpbhatt.icar@yahoo.com, Phone: 0612-2223962 (O), 2226781 (R) Fax: 0612-2223956	31-03-2010 to 30-06-2014	38.20000
CCPI 22	Dr. K. R. Kranthi, Director	Central Institute for Cotton Research (CICR), P.B. No. 2, Shankar Nagar, Nagpur - 440 010, Maharashtra cicrngp@rediffmail.com, Phone:07103-275536 Fax: 07103-275529	31-03-2010 to 30-06-2014	53.47409
CCPI 23	Dr. S. Dam Roy, Director	Central Agricultural Research Institute (CARI) P.B. No. 181, Port Blair-744 101 indirector@cari.res.in, Phone: 03192-250341 , 250436 Fax: 03192-251068, 233281	31-03-2010 to 30-06-2014	27.50000



2. Statement of budget released and utilization partner-wise (₹ in Lakhs)

S. No.	Centre	CPI/ CCPI Name, designation & address)	Total budget sanctioned	Fund released (up to 30 th June 2014)	Fund utilized (up to 30 th June 2014)
1.	ASRB, New Delhi	CPI- Dr. S. K. Bandyopadhyay, Member, Agricultural Scientists Recruitment Board (ASRB)Krishi Anusandhan Bhawan –I, Pusa, New Delhi-110 012	2571.68771	4515.85496	1946.43183
2.	IARI, New Delhi	CCPI- Dr. H. S. Gupta, Director, Indian Agricultural Research Institute (IARI) Pusa, New Delhi - 110 012	59.55000	80.91521	53.04746
3.	NAARM, Hyderabad	CCPI- Dr. S. L. Goswami, Director, National Academy of Agricultural Research Management (NAARM) Rajendranagar, Hyderabad - 500407, Andhra Pradesh	61.52148	61.47316	23.23512
4.	NDRI, Karnal	CCPI- Dr. A. K. Srivastava, Director, National Dairy Research Institute (NDRI)Karnal - 132 001, Haryana	35.99621	44.06742	24.65939
5.	IVRI, Bareilly	CCPI- Dr. R. K. Singh, Director, Indian Veterinary Research Institute (IVRI)Izatnagar- 243122, Bareilly, UP	59.55000	59.05983	47.20152
6.	CIFE, Mumbai	CCPI- Dr. W. S. Lakra, Director, Central Institute of Fisheries Education (CIFE) Panch Marg, Off Yari Road, Versova, Andheri (West), Mumbai – 400 061, Maharashtra	60.55000	58.27500	50.44612
7.	DMAPR, Anand	CCPI- Dr. P. Manivel, Director (Acting), Directorate of Medicinal and Aromatic Plants Research (DMAPR), Boriavi - 387310, Anand, Gujarat	54.45000	53.88614	48.02463
8.	IISR, Lucknow	CCPI- Dr. Sushil Solomon, Director, Indian Institute of Sugarcane Research (IISR)Raebareli Road, P.O- Dilkusha, Lucknow - 226 002, UP	54.65495	53.98415	37.81574
9.	CIAE, Bhopal	CCPI- Dr. Pitam Chandra, Director, Central Institute of Agricultural Engineering (CIAE) Nabi Bagh, Berasia, Road, Bhopal - 462 038, Madhya Pradesh	53.42970	52.00986	28.72986

S. No.	Centre	CPI/ CCPI Name, designation & address)	Total budget sanctioned	Fund released (up to 30 th June 2014)	Fund utilized (up to 30 th June 2014)
10.	MVC, TANUVAS, Chennai	CCPI- Dr. S. A. Asokan, Dean, Tamilnadu Veterinary Animal Sciences University (TANUVAS), Madhavaram Milk Colony, Chennai - 600 051, Tamil Nadu	55.47409	54.41305	49.69576
11.	CIFRI, Barrackpore	CCPI- Dr. A. P. Sharma, Director, Central Inland Fisheries Research Institute (CIFRI) Barrackpore Branch, Kolkata -700120, West Bengal	51.20000	50.04094	42.16623
12.	CIFA, Bhubaneswar	CCPI- Dr. P. Jayashankar, Director, Central Institute of Freshwater Aquaculture (CIFA) Kausalyaganga, Bhubaneswar-751 002, Orissa	50.40000	50.40734	34.78611
13.	CSWCRTI, Dehradun	CCPI- Dr. P.K. Mishra, Director, Central Soil and Water Conservation Research and Training Institute (CSWCRTI) 218, Kaulagarh Road, Dehradun - 248 195, UP	55.36972	54.28970	48.54099
14.	ICAR RC Barapani	CCPI- Dr. S. V. Ngachan, Director, ICAR Research Complex for NEH Region, Umroi Road, Umiam, Barapani, Meghalaya	52.95000	52.54721	28.66665
15.	NIANP, Bangalore	CCPI- Dr. C. S. Prasad, Director, National Institute of Animal Nutrition & Physiology (NIANP) Hosur Road, Adugodi, Bangalore- 560038, Karnataka	54.45000	52.57587	22.66798
16.	CMFRI, Cochin	CCPI- Dr. A. Gopalkrishnan, Director, Central Marine Fisheries Research Institute (CMFRI), PB No. 1603, Marine Drive North Extension, Ernakulam North, Cochin - 682 018, Kerala	51.90261	51.51723	49.27761
17.	CAZRI, Jodhpur	CCPI - Dr. M. M. Roy, Director, Central Arid Zone Research Institute (CAZRI) Jodhpur – 342 003, Rajasthan	54.45000	55.05533	57.14569
18.	CPRI, Shimla	CCPI- Dr. B.P. Singh, Director, Central Potato Research Institute (CPRI), Shimla - 171 001, HP	37.70000	36.73849	27.55503
19.	CIPHET, Ludhiana	CCPI- Dr. R. K. Gupta, Director, Central Institute of Post-Harvest Engineering and Technology (CIPHET) P.A.U. Campus, Ludhiana- 141004, Punjab	39.07106	36.37590	30.16721



S. No.	Centre	CPI/ CCPI Name, designation & address)	Total budget sanctioned	Fund released (up to 30 th June 2014)	Fund utilized (up to 30 th June 2014)
20.	CITH, Srinagar	CCPI- Dr. Nazeer Ahmed, Director, Central Institute of Temperate Horticulture (CITH), Old Airport Road, Rangreth, Srinagar-190007, J&K	38.22894	37.67500	36.15703
21.	FVSAH, SKUAST, Jammu	CCPI- Dr. S. K. Gupta, Dean, Faculty of Veterinary Sciences & Animal Husbandry, SKUAST-J, R.S. Pura, Jammu- 181 102, J&K	38.73944	37.48944	38.28698
22.	ICAR RC for ER, Patna	CCPI- Dr. B. P. Bhatt, Director, ICAR Res. Comp. for ER, ICAR Parisar, P.O. B.V.C. Campus, Patna - 800 014, Bihar	38.20000	37.50680	12.51239
23.	CICR, Nagpur	CCPI- Dr. K. R. Kranthi, Director, Central Institute for Cotton Research (CICR), P.B. No. 2, Shankar Nagar, Nagpur - 440 010, Maharashtra	53.47409	34.87500	34.86990
24.	CARI, Port Blair	CCPI-Dr. S. Dam Roy, Director, Central Agricultural Research Institute (CARI) P.B. No. 181, Port Blair-744 101	27.50000	27.10900	19.36745
Total			3710.50000	5648.14203	2791.45468

*For ASRB Expenditure upto 30-06-2014 and for partners upto 31-03-2014.

CPI–Consortia Principal Investigator, CCPI–Consortia Co-Principal Investigator

**Rs 26,28,44,149.00 has been refunded to PIU-NAIP from(2010–2014)

Part-II: Technical Details

1. Introduction

Agricultural Scientists Recruitment Board is a premier recruitment agency for recruitment to posts in the Agricultural Research Service (ARS) of the ICAR and to such other posts and services that the President, ICAR, may specify from time to time. ASRB is presently conducting National Eligibility Test (NET) for recruitment of faculty in SAUs twice in a year and ARS preliminary and main examination once in a year for recruiting Scientists in ICAR. NET and ARS preliminary exams are being conducted across the India in 55 disciplines of agriculture science. These exams are objective type with 4 multiple choices. The present manual system of conducting the exam is time consuming and prone to number of errors in recording the data of students, paper setting and dispatching, conducting of exams, evaluation of answer sheets etc. Moreover, a large number of human resources are engaged in managing the activities of exam in present format throughout the year. In view of these problems the present sub project is designed and proposed to computerize the activities of examinations including online registration by candidates, fee payment, generating and downloading admit cards, conduct of computer based exam, and declaration of results, etc. The intervention of ICT will help to bring efficiency, accuracy, fairness, and to improve the overall quality of examination system. It is expected that online examination system will reduce the requirement of human resource in conducting and exams and will facilitate the candidates in applying for the examination.

2. Overall Sub-project Objectives

- I To develop the infrastructure and capability to change over from onsite to online Examination for NET/ARS PRELIM.
- II To build, own and operate (develop, procure, install, commission, operate & manage) an Online Exam System for the NARS at ASRB with 23 Nodal Centers across the country including to automate the online registration, validation, hall ticketing, allocation of centers, and result declaration process for NET and ARS.
- III To develop a question bank in all the NET/ARS disciplines.
- IV To conduct the annual NET/ARS PRELIM through an online examination at 23 Nodal Centers in the Country.
- V To ultimately put in place a National Facility for online examinations for use of not only by ASRB, but also by ICAR Administration for online Audit and Accounts Examination, Education Division of ICAR for online scholarship and admission examination and for Staff Recruitment through online testing.

3. Sub-project Technical Profile

(Indicate briefly objective-wise work plan, monitoring indicators, expected output and expected outcome)

I. To develop the infrastructure and capability to change over from onsite to online Examination for NET/ARS PRELIM.

Monitoring indicators:

- Identification of locations and space for establishment of examination centers at 23 ICAR institute/SAUs.
- Completion of civil, electrical and LAN work in the examination centers.
- Establishment of Data Center and Disaster Recovery site at ASRB
- Training program for technical staff on the process of conducting online examination.

Expected output:

- Well established 23 examination centers, Data Center and Disaster Recovery site for installation and hosting of equipment for online examination.
- Trained manpower within the system

Expected outcome:

- It will facilitate to change over from onsite to online Examination for NET/ARS PRELIM.
- Increased level of awareness about induction of online examination into the system.

II. To build, own and operate (develop, procure, install, commission, operate & manage) an Online Exam System for the NARS at ASRB with 23 Nodal Centers across the country including to automate the online registration, validation, hall ticketing, allocation of centers, and result declaration process for NET and ARS.

Monitoring indicators:

- Hiring of an outsourced agency for supplying hardware and software at ASRB & 23 examination centers.
- Procurement, supply, installation and commissioning of hardware and software solution by the outsourced agency.
- Development of application software modules for online registration, fees payment, generating and downloading admit cards, and result declaration and test administration.
- Conducting trial runs for online examination.

Expected output:

- Development of well equipped network of 23 examination centers, Data Center and Disaster Recovery site with state of the art infrastructure for conducting online examination.
- Customized software for online registration, fee payment, generating and downloading admit cards, declaration of results, and test administration.

Expected outcome:

- Improvement in capability and capacity to conduct online exams.

III. To develop a question bank in all the NET/ARS disciplines.

Monitoring indicators:

- The development/ customization of software for digitizing question bank
- Digitization of question bank for 55 disciplines of agriculture science.

Expected output:

- Availability of digitized question bank in 55 disciplines of agriculture science

Expected outcome:

- Improved efficiency in updating the question bank and paper setting.

IV. To conduct the annual NET/ARS PRELIM through an online examination at 23 Nodal Centers in the Country.

Monitoring indicators:

- Inviting online applications,
- Compilation and preparation of database of applicants
- Generating and issuing admit cards
- Testing of the examination network system prior to the conduct of online exam.

Expected output:

- Database of applicants
- The conduct of online examination at 23 examination centers.
- Online result declaration of successful applicants

Expected outcome:

- Issuance of admit cards in minimum time with no errors
- Fast issuance certificates to successful candidates just after declaration of result
- Improved efficiency, accuracy and fairness in the examination system.
- Reduction in time and manpower requirement.
- Availability of applicants data for analysis

V. To ultimately put in place a National Facility for online examinations for use of not only by ASRB, but also by ICAR Administration for online Audit and Accounts Examination, Education Division of ICAR for online scholarship and admission examination and for Staff Recruitment through online testing.

Monitoring indicators:

- Establishment of online examination network well equipped with state of the art hardware and software as National Facility for conducting online examinations.

Expected output:

- Availability of National Facility for conducting online examinations.

Expected outcome:

- The National Facility can be used for conducting online examinations by ASRB/ ICAR.

4. Baseline Analysis

ASRB is conducting National Eligibility Test (NET) for recruitment of faculty in SAUs twice in a year and ARS preliminary and main examination once in a year for recruiting Scientists in ICAR. NET and ARS preliminary exams are being conducted at 33 centers across the India in 55 disciplines of agriculture science. These exams are objective type with 4 multiple choices. Approximately 50 thousand candidates for NET and 20 thousand candidates for ARS (Preliminary) applied in a year for these examinations. The process of managing and conducting onsite examination is a cumbersome and time consuming task. Moreover, chances of making errors are high at every stage of processing for example in handling applicants' data, issuance of admits cards, evaluation of answer sheets etc. Therefore, the present sub project is proposed to change over from onsite to online examination which is fast, efficient and transparent. The system will benefit the candidates aspiring for NET/ ARS examination in NARS system.

5. Research Achievements with Summary

The objectives/ activities wise achievements of the project are as follows:

(i) To develop the infrastructure and capability to change over from onsite to online Examination for NET/ARS PRELIM;

The network design for creating a fully owned and dedicated online examination system was conceptualized by considering and analyzing the inputs obtained through experts committee reports (Dr. Paroda committee's recommendations), brainstorming sessions, discussions held with the experts in the area of IT and online examination. Accordingly, the Online Examination Network consists of one Data Center (DC) at ASRB, One Disaster Recovery (DR) site near ASRB premises, and 23 Examination Centers (or Nodal Centers) across the country. These examination centers have been identified and created at 21 ICAR institutes and 2 SAUs considering that the management control would be better at these locations being part of the NARS family. ASRB engaged an IT advisor, i.e., M/s Consultancy Development Centre (CDC), Ministry of Science and Technology, Govt. of India, for finalizing the details of hardware and software requirement at DC, DR and examination centers, preparing Request for Proposal (RFP) and Expression of Interest (EOI), opening and evaluation of bids, preparation of techno-commercial evaluation report, selection of the agency for supplying and installation of hardware and software, preparing the final contract agreement and other related activities. The distribution of Examination Centers (or Nodal Centers) across the country are shown in the figure (Fig. 3) given below. Details of examination centers along with seating capacity and photographs are enclosed as Annexure-I.

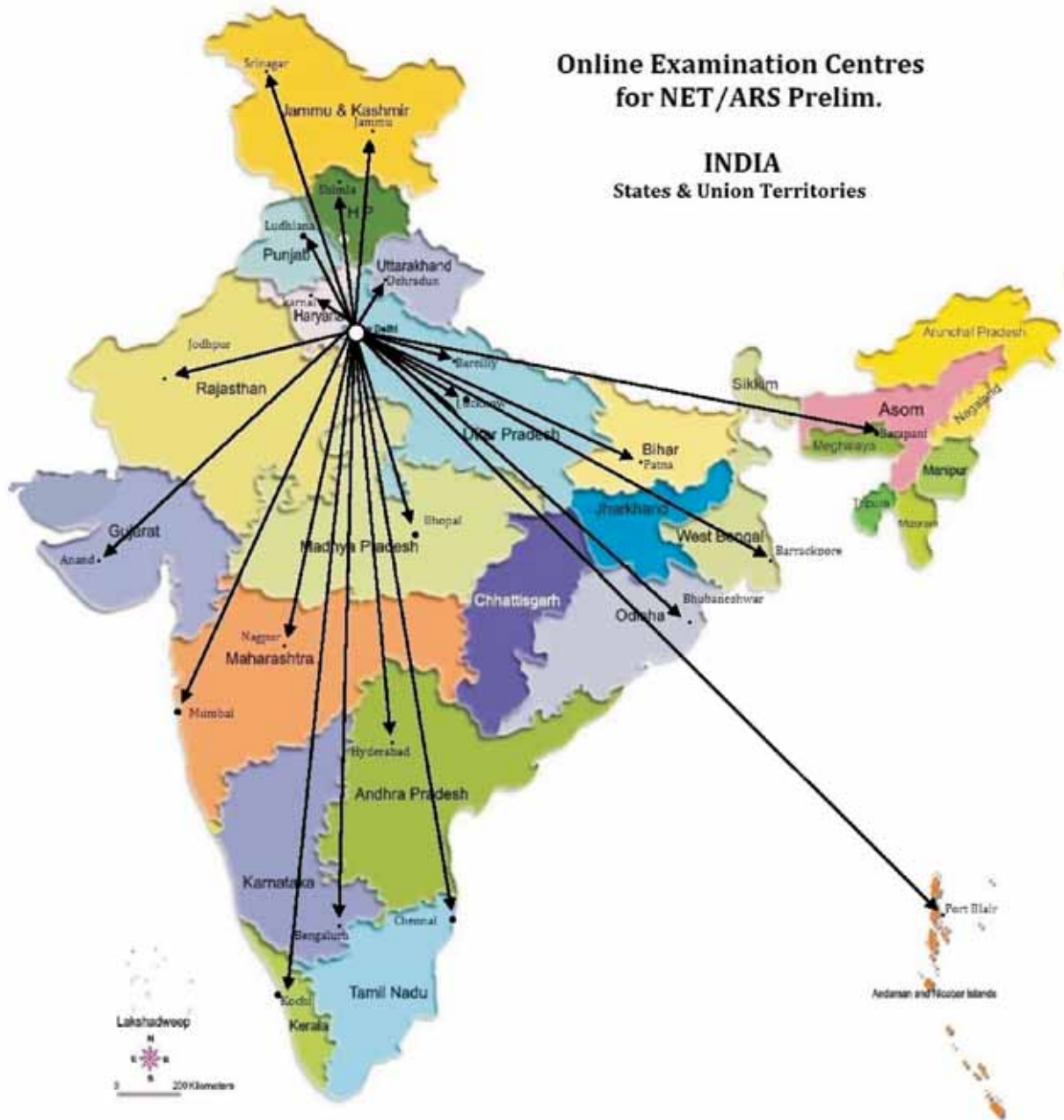


Fig. 3: Distribution of examination centers across the country

Following the NAIP standard procedures for procurement of equipment and services and accepting the recommendation of the consulting agency, i.e., CDC, the job of implementing the Online Examination System on a turn-key basis was awarded to M/s Vayam Technologies Ltd., and its consortium partner, i.e., M/s Eduquity Careers Technology Pvt. Ltd. The job outsourced to this Agency included, procurement, transportation, installation of hardware in DC, DR sites as well as at all the Examination Centers, development of appropriate and customized software for registration of applicants, preparing question bank software, question paper setting,

conducting online examination and evaluation & declaration of results. The contract with the outsourced Agency was made valid for a period of three years after the operational acceptance of the system for conducting NET/ARS examinations. The job of the lead centre and that of the Cooperating Centers (Examination Centers) were to provide appropriate examination hall, provide appropriate furniture, creating LAN and carrying out other civil and electrical work, as appropriate. The Lead Centre, i.e., ASRB was also required to develop a digitized question bank using the software to be developed under the project. The outsourced Agency was contracted to conduct examinations under direct supervision of ASRB, while the cooperating centers were required to ensure smooth conduct of examination at their centers as well as to provide technical invigilation when necessary at the time of examination.

The civil, electrical and LAN works were completed at DC and examination centers well in advance before the actual supply of hardware and software. The Data Center has been designed to host a number of hardware and software like Web server, Application server, LDAP server, Database server, Backup server, EMS server etc., to provide services to applicants and examination centers before and during the examination period. The DR site has been designed to keep the backup of data of the DC automatically at regular intervals. The examination centers at the institutes have been created to host number of computers varying from 20 to 120 computers depending upon the location, two servers, and appropriate power backups (UPS) in each. The computers are connected to servers through Local Area Network (LAN) and the Servers at the Examination Centers are connected to DC through the Internet connectivity for the purpose of downloading question papers, uploading the log files, and real-time interactions with the control room at ASRB, DC during the examination days.

The entire online examination system was monitored and controlled by the National Online Examination Center (NOEC) established at ASRB. The NOEC managed the activities related to online examination at ASRB, e.g., preparation of question bank, validation and certification and supervising the actual conduct of online exam. The examination centers in turn were supervised by the CCPIs appointed by NAIP in consultation with CPI. The CCPIs of the consortium partners have further appointed nodal officers and technical staff at the examination centers for establishing the centers and taking care of technical issues on a day to day basis.

As a part of capacity building, CCPIs, nodal officers and technical staff have been sensitized about the online examination system during the launch workshop held on 1st July, 2010. Later on a special training program was organized from 21st - 22nd November, 2013 (two days) for nodal officers and technical staff of each Examination Center to acquaint them with the complete process of online examination system. Photograph of the question hour session of the training program is shown below (Fig. 4). A field level training was also organized at their respective centers to provide a hands-on training on the management of server applications, file and folder management, registration of candidates, downloading and uploading of files from DC, seat allocation and conduct of online examination etc. The detailed process of conducting the online examination has been documented in the training manuals.



Fig. 4: Nodal officer and technical staff training at Online Examination Center, IARI, New Delhi

(ii) To build, own and operate (develop, procure, install, commission, operate & manage) an Online Examination System for the NARS at ASRB with 23 Nodal Centers across the country including to automate the online registration, validation, hall ticketing, allocation of centers, and result declaration process for NET and ARS:

An outsourced agency M/s Vayam Technologies Limited in consortium with M/s Eduquity Career Technologies Pvt. Ltd. has been selected through the International Competitive Bidding process as per NAIP guidelines, for supplying, installation, and successful commissioning of hardware and software solutions for establishment of the network under the project. The agency procured, supplied and installed the necessary hardware and software for conduct of online examination at DC, DR site, and 23 online examination centers. The DC is well equipped with state of the art hardware and software including a number of servers, SAN storage, tape library, latest application and system software to control the activities of online examination. A dedicated Internet leased line (1:1) of 4 Mbps for Internet connectivity is provided in DC to connect with examination centers. The Data Center is fully secured through Internet Firewall (Checkpoint) and Network Intrusion Prevention System (Radware) appliances deployed in the Data Center Network, and also with Host Intrusion Prevention System (Trend Micro) software deployed on all Servers. The DR site has been created in the IARI campus and is well equipped with necessary equipment. The DC and DR sites have been connected through a dedicated wireless link of 10 Mbps for data backup. The schematic diagrams of DC (Fig. 5) and DR (Fig. 6) setup are shown below:

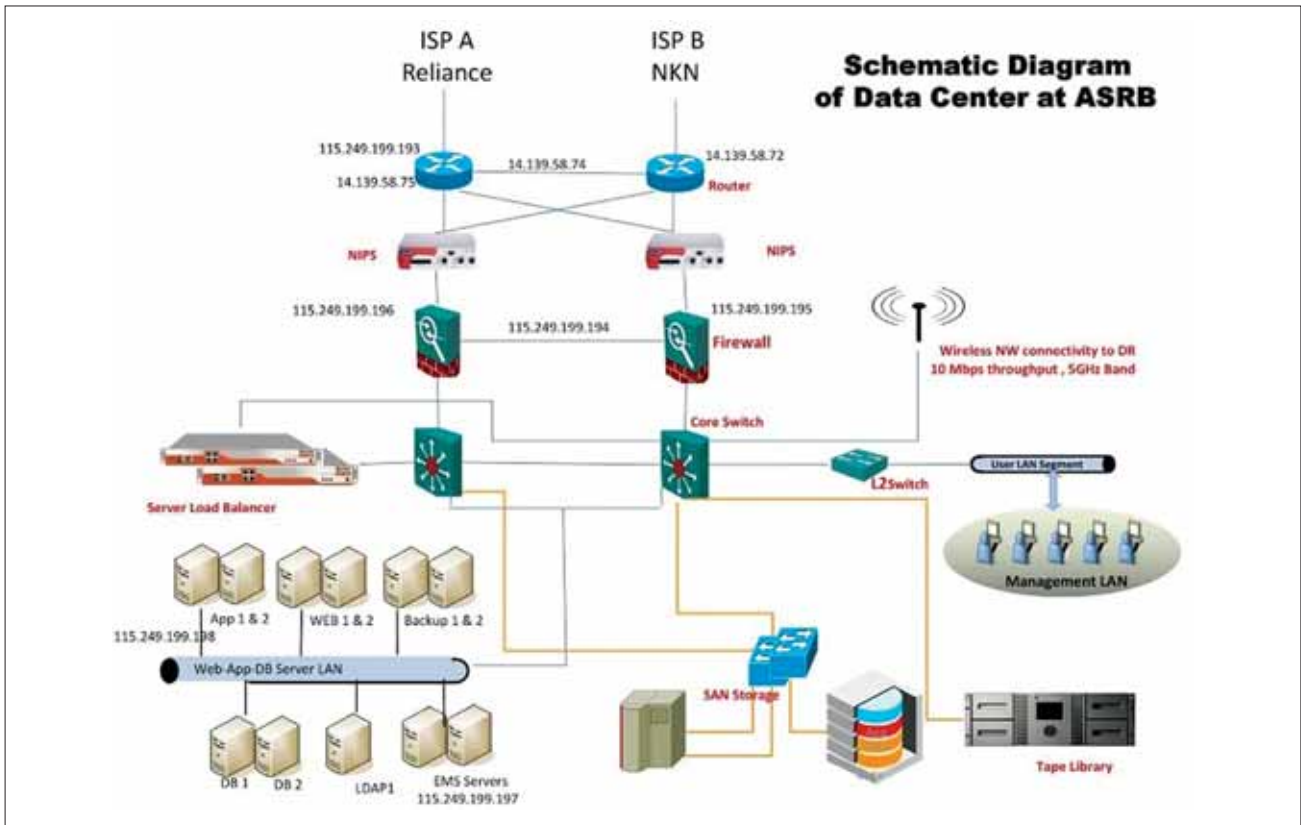


Fig. 5: Schematic diagram of DC setup

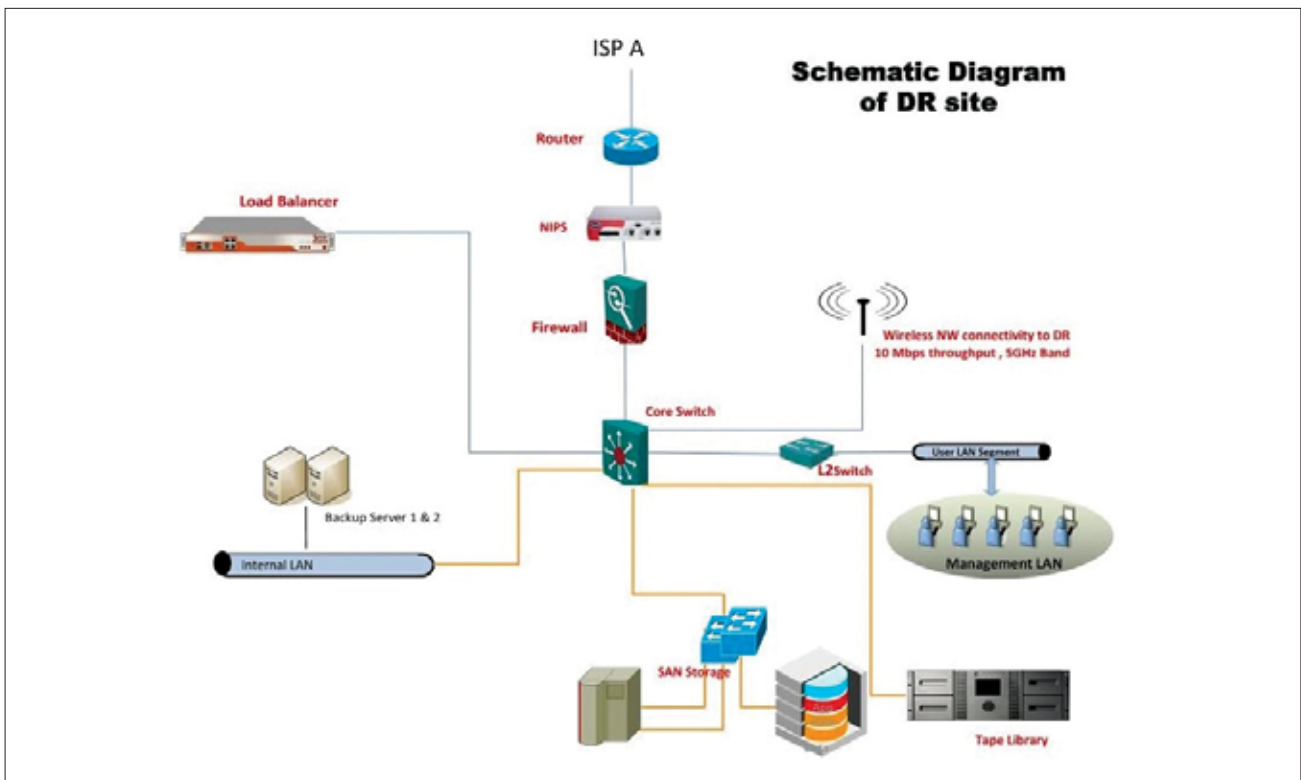


Fig. 6: Schematic diagram of DR setup

The examination centers are connected with DC through high speed broadband connectivity through BSNL/MTNL network, except at DMAPR Anand where the connectivity has been provided through a private ISP due to non availability of the BSNL network. The management structure and functioning of online examination network system consisting of NOEC and 23 examination centers is depicted through the diagram (Fig. 7) given below:

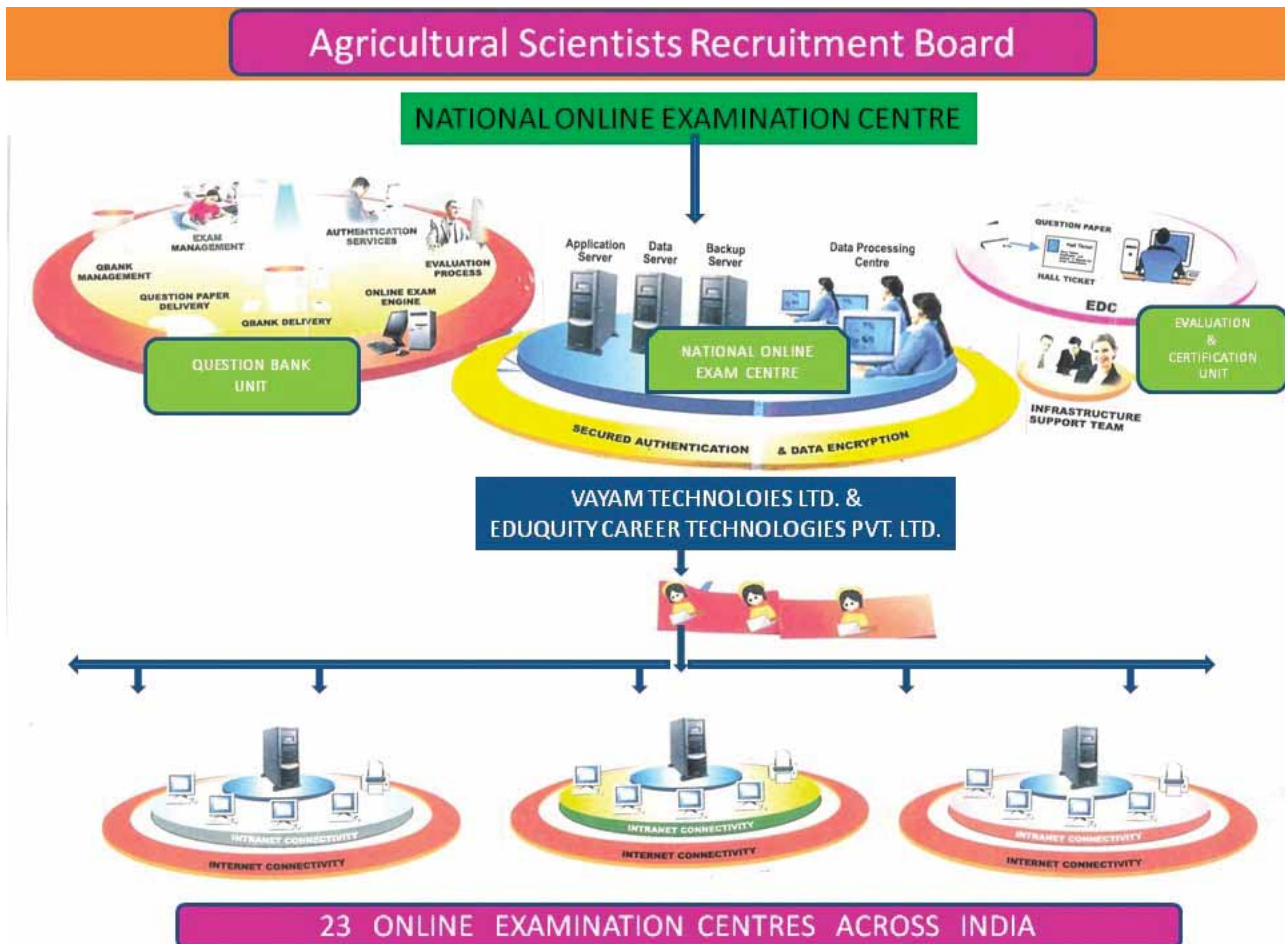


Fig. 7: Management structure of online examination network system

The application software modules for online registration of applications (Fig. 8), payment of examination fees through integrated online payment gateway, allocation of examination centers/slots, generating and downloading of admit cards (Fig. 9) and declaration of results have been developed and customized as per the needs of ASRB. Test administration software (Fig. 10) has also been customized for NET/ARS examinations. These applications software modules have been developed using ASP.NET and VB.NET on the framework 4.0 - Visual studio 2010. Databases have been designed and developed using SQL server – 2012.

AGRICULTURAL SCIENTISTS RECRUITMENT BOARD (ASRB)
 Indian Council of Agricultural Research (ICAR)
NATIONAL ELIGIBILITY TEST (NET) EXAMINATION - 2013

Candidates are advised to refer to the Board's notification no dated 01st August 2013 Published on Employment News/Rozgar

Procedure for submission of Application

Part I- Registration & Personal Details

Part II- Applicant's NET Related Details & Qualification Details

Part III- Photograph & Signature Upload

Part IV- Fee Details

Part V- Print Application Form

Login Details

Registration Number

Date of Birth DD Month YYYY

IMPORTANT INSTRUCTIONS TO THE CANDIDATES FOR FILLING ONLINE APPLICATIONS

NET-2013 NOTIFICATION

Fig. 8: Online registration software

कृषि वैज्ञानिक भवन भारत
(आ.सू.अनु.प.)

AGRICULTURAL SCIENTISTS RECRUITMENT BOARD (ASRB)
(Indian Council of Agricultural Research) (ICAR)
Krishi Anusandhan Bhawan-I, Pusa, New Delhi-110012.

प्रवेश पत्र / Admission Certificate
राष्ट्रीय पाठ्य परीक्षा-2013 / National Eligibility Examination (NET) -2013

आपको उपरोक्त परीक्षा में अंतिम स्तर पर प्रवेश दिया जाता है
You are hereby provisionally admitted to the above examination.

परीक्षा की तिथि/Date of Examination : **27-10-2013**

परीक्षा का समय/Time of Examination : **10.00 AM-12.00 Noon**

पंजीकरण सं./Registration No.	: 102309		
अनुक्रमांक/Roll No.	: 1314700001		
परीक्षार्थी का नाम/Name of the Candidate.	: MRUDULA BALEY		
पिता का नाम/Father's Name .	: JOHN MELONGSTON		
जन्मतिथि/Date of Birth.	: 10-Apr-1988		
वर्ग/Category.	: OBC (Creamy layer)		
लिंग/Gender.	: Female		
पत्र सं. की विषय (कोड संख्या)/NET Discipline (Code No.).	: Agricultural Economics (47)		
चयनित परीक्षा केंद्र (कोड संख्या)/Examination Center Opted (Code No.).	: Hyderabad (13)		
परीक्षा केंद्र का नाम और पता/Name and Address of Examination Center.	: St. Ann's Junior College For Girls, Santoshnagar Colony, Mehdiapatnam, Hyderabad-500028.		

नोट 1: आपको सलाह दी जाती है कि आप चयनित परीक्षा केंद्र में ही परीक्षा में शामिल हों। आपको किसी अन्य परीक्षा केंद्र में शामिल होने की अनुमति नहीं मिलेगी।
Note 1: YOU ARE ADVISED TO APPEAR FROM YOUR EXAMINATION VENUE AS MENTIONED ABOVE ONLY AS YOU WILL NOT BE PERMITTED TO APPEAR FROM ANY OTHER VENUE/CENTER.

नोट 2: यह भी सलाह दी जाती है कि आप समय रहते परीक्षा केंद्र को जानकर देखें ताकि अंतिम समय में सफा करने में किसी प्रकार की परेशानी नही हो।
Note 2: PLEASE GET YOURSELF FAMILIARIZED WITH THE EXAMINATION VENUE LOCATION BEFORE THE EXAMINATION DAY TO AVOID LAST MINUTE DIFFICULTY IN LOCATING IT.

Sd/-
(P.K.Jain)
परीक्षा निदेशक-II
Controller of Examination-II
E-Mail: net2013@asrb.org.in

कृपया विस्तृत अनुदेश देखें।
 Please see detailed instructions .

Fig. 9: Admit card software

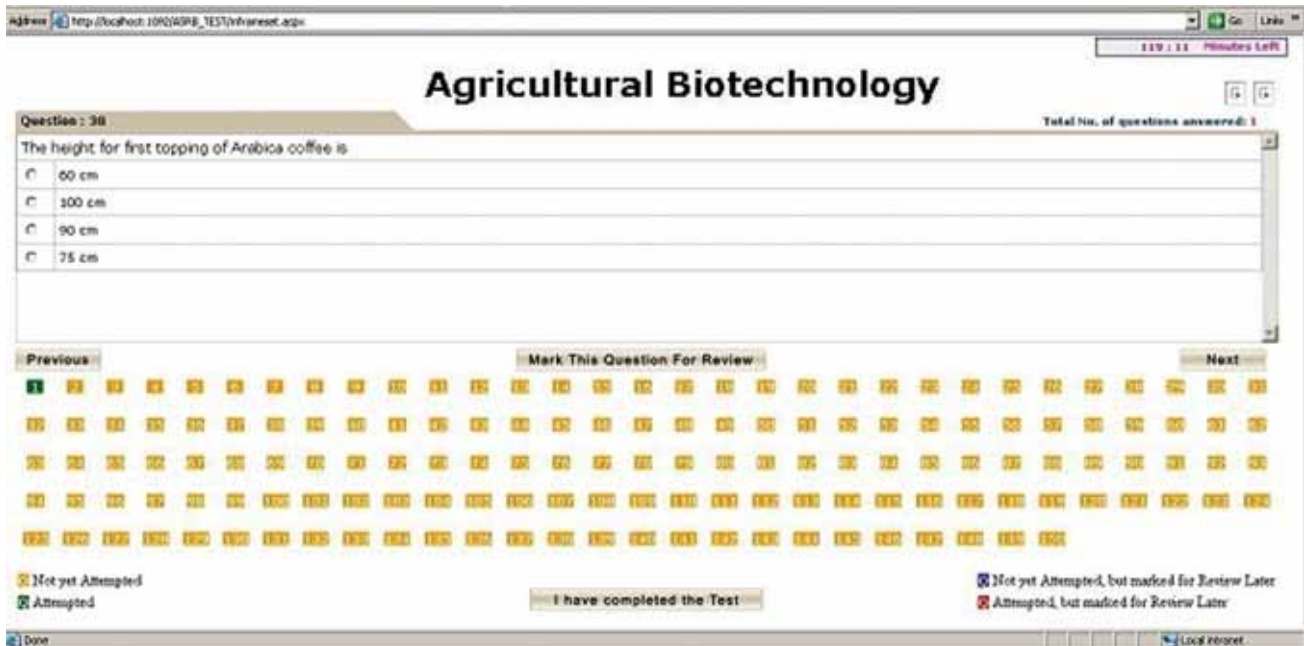


Fig.10: Test administration software

The installation and commissioning of the entire system (including hardware and software) has been tested through a series of trial runs on selective centers as well as on all computer systems in all the centers. Minor deficiencies found during trial runs were immediately rectified. As per the advice of the NAIP, the entire examination system network developed under the project was subjected to security audit by engaging a third party specialist consultancy agency, i.e., M/s KPMG by ASRB. The entire system was audited for: 1) Asset and Acceptance audit of hardware; 2) Application Software Audit; 3) Information System Security Audit. As per the recommendation of the audit report, some additional safe guards are required to be incorporated in the entire system, which was not in the original plan, e.g., fire prevention, protection, alarm, fire proof storage, etc. However, as per the final audit report, the system is secure for the conduct of online examination.

Some of the important feature of the online registration module, admit card module, test administration module and result module are described below:

Online registration module

- Each applicant is uniquely identified by the combination of registration number and date of birth of the candidate.
- Same email id cannot be used for another registration. For confirming the e-mail ID, copy paste feature is not allowed to avoid mistakes in e-mail ID entry.
- After completing personal details, the candidate is informed about the registration number and date of birth through SMS as well as through email since this information is used as Login ID for further filling up of the application form.
- Virtual keyboard in Hindi font is also available for filling up information in Hindi language as future requirement of ASRB.



- ReCAPTCHA image feature is used to ensure that the application details are filled by the applicant instead of auto fill by machine.
- The photograph and signature of the applicant are stored in the database for identification of applicant.
- Online payment can be done through credit card, debit card, net banking and preprinted challan.
- After successful registration, candidate can choose date, time and centre of examination as per his/her preference and availability of seats.

Admit card module

- Applications are scrutinized for checking duplicity and payment issues.
- Roll number are generated to for valid applicants.
- A Link will be provided through e-mail and SMS to all valid applicants.
- An applicant can download admit card multiple number of times from the given link by entering registration number and date of birth.
- A unique barcode of Roll Number is also generated on the admit card for easy identification while registration for allotment of machine/seat at the examination center.

Test administration module

- Welcome screen is displayed on the allotted machine which displays the photograph, candidate name and discipline opted. In case of any discrepancies in the above details, candidate may report the test administrator.
- To read the instructions and start the test, candidate has to enter the password printed on the admit card so that no other person can start the test in place of original candidate.
- Questions are displayed randomly on each machine one by one.
- Virtual calculator is inbuilt in the software for some disciplines.
- Questions can be attempted in any order.
- Timer is displayed on the screen for candidate information.
- The questions can be marked as attempted, attempted but marked for review, question read but marked for review in different color for easy identification.
- Responses and log of each and every event are recorded.
- The test can be restarted from the left over point in case of system failure.
- The submit button is activated only 5 minutes prior to actual completion of the test time.

Result module

- Program takes care of negative marking and relaxation for reserve categories.
- Results are produced discipline wise and center wise.
- Certificates are generated and made available online for downloading by successful candidates.

(iii) To develop a question bank in all the NET/ARS disciplines

The software for creating question bank has been modified to meet the requirements of ASRB. A question bank of approximately seventy two thousand questions covering, 55 disciplines of NET/ARS, has been created. The questions are encrypted in the question bank using 128 bit RSA encoding scheme. ASRB has taken the initiatives to improve the format of questions to digitize and to enter into the question bank. A large number of subject-matter experts in the country across all disciplines of agricultural and related sciences have been requested to send both objective and subjective questions in a specially prepared question format which gives not only the stem and key of the question but also indicates the difficulty level on a 3 point scale. This enables the question paper setter, subsequently, to choose an appropriate mix of easy, moderate and difficult questions for each subject and to maintain the balance across the various disciplines. Basically, the questions are aimed at five following objectives:

1. Testing for knowledge.
2. Testing for understanding.
3. Testing for analysis.
4. Testing for application.
5. Testing for synthesis.

The digitized questions will be kept in the Question Bank according to subjects and difficulty levels. Multiple sets of question papers will be prepared from the question bank by the subject matter experts for which a computer program has been written and tested for generation of different question paper sets. The questions are drawn randomly from the question bank for preparing question papers discipline wise. Enlarging the database of the question bank will be a continuing exercise and new questions will be added throughout the year. Digitization work on the question database is an ongoing process at NOEC. Screen snapshots (Fig. 11 & Fig. 12) of the software for creating question bank are shown below:

Some of the important feature of the question bank software module and question paper generation module are described below:



Fig. 11: Question bank software



Fig 12: Question entry interface



Question bank software module

- The question bank has three modules for different type of users i.e. Admin module, Author module and Validator module.
- The functionality of the software is controlled by the administrator through admin module.
- Each author is given a unique user name and password to enter questions in the question bank using the author module.
- The user name and password of the author gets expired automatically after entering the assigned number of questions of the particular discipline.
- While entering the questions, the author requires to select the unit to which the question belongs, difficulty level and randomization (for answer options).
- The questions can consist of multiple choices and can store images, mathematical equations, chemical equations, different fonts of text, audio and video, numbers etc.
- The validator validates (approve, edit and reject) the questions entered in the question bank using the validator module.
- All the questions and the responses are stored in encrypted form using 128 bit RSA encoding scheme.

Question paper generation software module

- Only the approved questions are used for question paper generation
- Multiple sets can be generated for a particular discipline
- Question papers are generated based on the pre designed criteria for selection of number of questions unit wise and difficulty level wise of the particular discipline.

(iv) To conduct the annual NET/ARS PRELIM through an online examination at 23 Nodal Centers in the Country.

The software modules developed under the project for online registration, payment of fees, slot allocation, generating and downloading admit cards have been successfully tested for both NET- 2013 and ARS-2013, in the month of Sep-Oct, 2013 and Nov-Dec, 2013 respectively, in order to test and gain confidence on step-by-step application of the entire online examination system. However, the actual examination was conducted on paper as per the conventional method. The certificates to successful candidates were also issued online for NET-2013.

The first complete online examination has been conducted for NET-2014(1) from 26th March, 2014 to 4th April, 2014, for which the online registration process was started in the month of February, 2014. The process of conducting the computer based test (CBT) has been standardized as per the requirement of ASRB and has been documented in the standard operating procedures (SOP) manual published by ASRB. The technical process of CBT process was managed and controlled by the technical persons of the outsourced agency. Administrative process of the CBT was managed by the ASRB. The CBT process started with the online registration by the applicants. The examination fee was paid online by the applicants through e-commerce transaction and the applicants also selected the examination center online at the time of submitting the application as per their choice and availability of seats at the particular examination center.

After that, applications were scrutinized and accordingly admit cards were generated and issued to the valid applicants.

A Master Control centre was set up at the NOEC to coordinate the activities with all the examination centers before start of the CBT. It provided the necessary data and files (applicants database along with server setup details) pertaining to the examination to the centers and also upload the question papers to be downloaded by the test centres at the allotted time. Technical people (hardware and software engineers) were deputed to each examination centre to take charge of the center two days in advance before the actual test date. All the systems and equipment were thoroughly checked at the centers two days before the conduct of actual examination through full load dummy tests. A Local Test Control setup was established at each examination center to liaison with the Master Control setup for downloading the files and configuring the local servers for conducting CBT. The schematic diagram of Master Control setup (Fig. 13) and Local Test Control setup (Fig. 14) are shown in the figures given below:

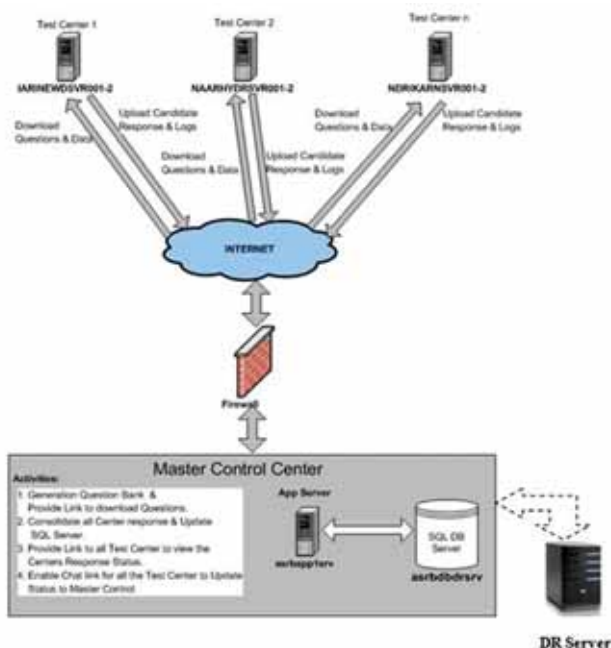


Fig. 13: Master control setup

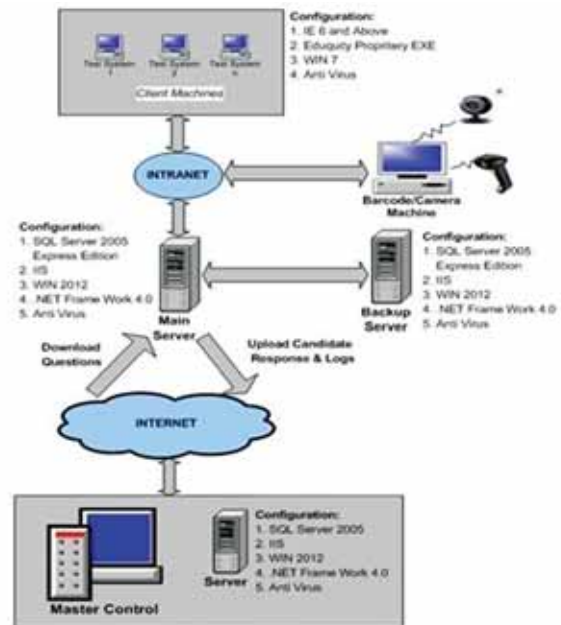


Fig. 14: Local test control setup

The entire examination for NET-2014(I) was conducted online from 26 March to 4th April, 2014 in 23 Examination Centres. Applications were invited for online registration for NET-2014(1) from 8-2-2014 to 28-2-2014. Altogether, 18245 candidates registered for 55 disciplines of agricultural sciences in NET however, only 14178 (77.7%) candidates actually appeared in the examination. The examination was conducted in two slots per day for 10 days. Depending on the number of candidates in a particular discipline, the examination was conducted in single/multiple disciplines in each slot. At the time of submission of this report, results of NET-2014(I) are being analyzed internally in ASRB as per standard practice before the results are declared.

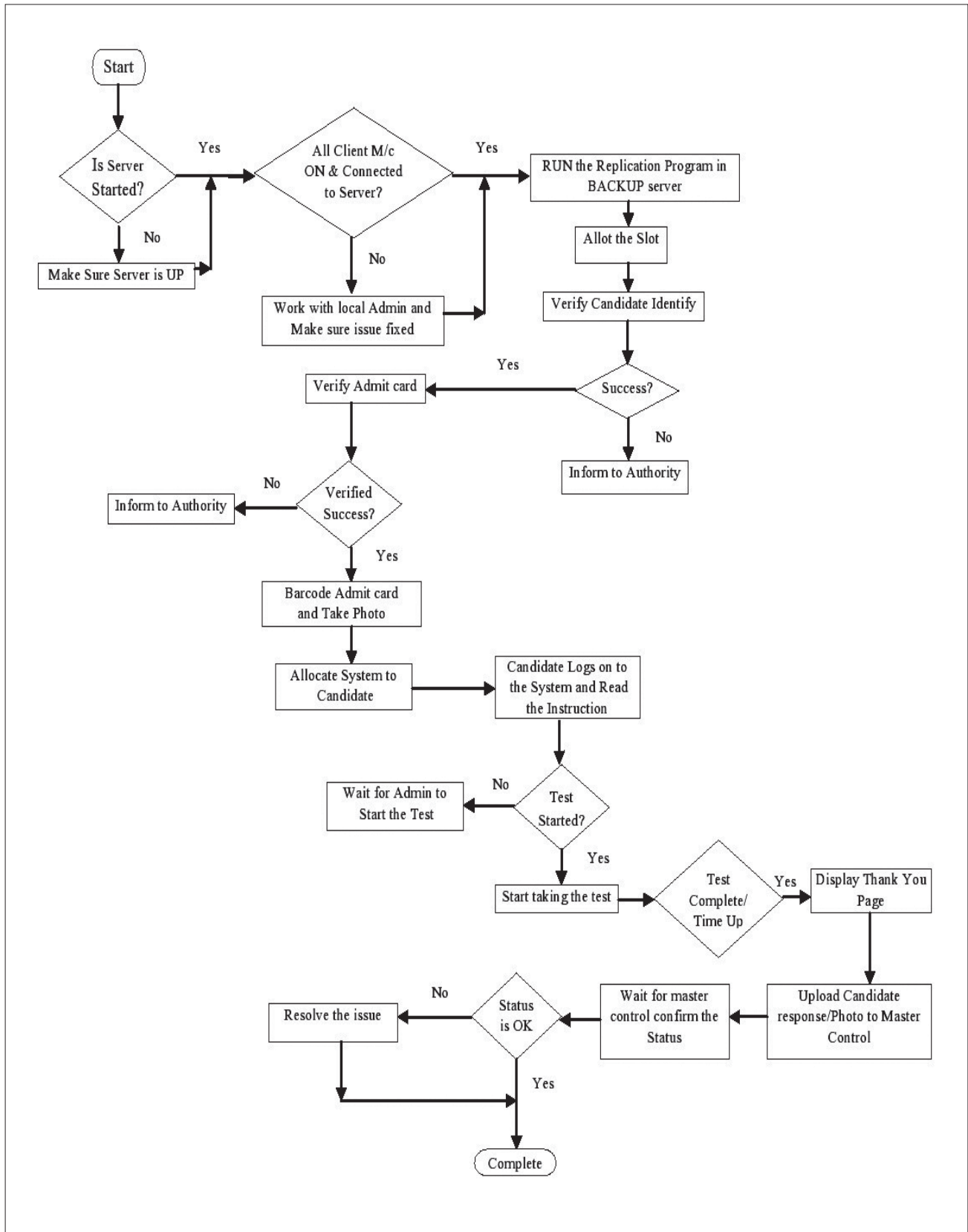


Fig. 15: Test center activities

The question papers (QP) were uploaded by the Master control setup on the server at DC just two hours before the start of the actual examination every day. The QPs were downloaded on the local server first and were released to candidates only at the time of examination. Candidates were allotted seats randomly in the center just 30 minutes before the start of online examination. The designated person started the examination at the pre-defined time in each center simultaneously in synchrony with all the centers. As the technical person pressed “Start” button on the local server, the QPs were displayed on the computer screens of the candidates immediately. The test terminated automatically after the allotted time of examination or whenever the candidates choose to terminate before the automatic termination. After completion of the examination, log files (including candidate’s responses and events log) of all the candidates appeared for the examination were uploaded from the local server to the DC by each center every day. At the end of one complete cycle of the CBT, all the logfiles, databases including the photos and fingerprints of the candidates, who took the test uploaded to the DC by each Examination Center. The activities carried out at each test center before and during the online test have been shown in the flow chart (Fig. 15) as given below:

The automation of different components of examination system, i.e., online registration including examination fee payment and center allocation as per the choice of candidates, issuance of admit cards, result processing and issuance of certificates to successful candidates, have considerably improved the efficiency of application processing by reducing the number of days and manpower usually required for manual processing, reduction of errors in data entry and processing of results. The computer based test conducted for the first time has reformed the existing system of pen and paper based test, i.e., answering the questions on computers was more convenient to candidates where the candidates have flexibility to review the questions later on and to change the marked answers easily at any time during the examination time. The entire process of online examination system is more proficient in terms of time, quality, confidentiality, cost, manpower, and hassles in sending teams with question papers and answer sheets at onsite examination centers, etc.

- (v) **To ultimately put in place a National Facility for online examinations for use of not only by ASRB, but also by ICAR Administration for online Audit and Accounts Examination, Education Division of ICAR for online scholarship and admission examination and for Staff Recruitment through online testing.**

The project helped in creating a National Facility for online examination of NET and ARS (Preliminary) examination for at least 2000 candidates at one time through its 23 examination centers distributed across the length and breadth of the country. As was envisaged during the project formulation stage this facility is now ready for use of not only for NET/ARS (Preliminary) examinations of ASRB but also any other such computer based tests that ASRB or ICAR wishes to conduct henceforth even at the level of cooperating centers. Computer based tests can be conducted at the local level by the facilitated institutes as per their requirement. However, each such test would require specific software to be designed as per requirement and a separate question bank specific to a particular type of test will be required to be deployed.

Summary

- i. Each of the 23 consortium partners (21 ICAR institutes and 2 SAUs) established the online examination centers at their respective institutes as per the requirement.
- ii. Established Data Centre and National Online Examination Center at ASRB.
- iii. Disaster Recovery site of the System was established at IARI.
- iv. M/s Vayam Technologies Ltd., was selected as an outsourced agency as per NAIP procedures for supplying, installation and commissioning of hardware and software under the project.
- v. The outsourced agency procured, delivered, installed and commissioned the hardware and software (desktops, servers, UPS, switches, routers, multimedia kits and software) at DC, DR and 23 online examination centers.
- vi. The installation and commissioning of hardware and software supplied under the project were tested through a series of dummy tests.
- vii. Software developed and finalized for submission of online applications, generating and downloading admit cards, result declaration and other MIS reports for NET & ARS examinations. These software modules have been also tested successfully for NET-2013 & ARS-2013 examinations.
- viii. Software for digitizing a question bank has been developed and finalized for creating a question bank. Approximately 72000 questions have been digitized in 55 disciplines of agricultural sciences.
- ix. The hardware and software supplied under the project has been audited to ensure the quality and security of the system by engaging a third party consultant, i.e., M/s KPMG appointed by ASRB. As per the recommendation of the audit report, some additional safe guards are required to be incorporated in the entire system, which was not in the original plans, e.g., fire prevention, protection, alarm, fire proof storage, etc.
- x. Organized a training program at Online Examination hall, IARI, New Delhi for Nodal Officer and Technical staff of 23 consortium partners to acquaint them with the online examination process.
- xi. Organized field level trainings program for Nodal Officers and Technical staff for demonstration and hands on practice on the process of conducting actual online examination at respective centers during the dummy tests.
- xii. The first online examination was conducted successfully for NET-2014(1) from 26th March, 2014 to 4th April, 2014, for which the online registration process was started in the month of February, 2014. A total of 18245 candidates applied for the NET-2014(1) however, only 14178 (77.7%) candidates actually appeared in the examination. The final result of the examination is waiting to be declared at the time of submission of this report.
- xiii. The process of conducting the computer based test has been standardized as per the requirement of ASRB and has been documented in the SOP manual published by ASRB.

6. Innovations

(i) Established state of the art Examination Centers and Data Center for conducting online examinations.

Trials for conducting online examinations have been carried out successfully. The development of these centers will help to change over from onsite to online Examination for NET/ARS (Preliminary). The online examination system will have made visible impact on following aspects:

- Improved accuracy in evaluation and confidentiality.
- Reduce paper work.
- Less time required to evaluate papers.
- An efficient & transparent examination system.
- Candidate friendly and zero delay in application process.

(ii) Developed/ customized the following software modules for conducting online examination at ASRB:

- Digitizing question bank. The expertise gained over the year by the ASRB in maintaining and developing the question bank has been translated into the software for digitizing the question bank. It is a unique feature in the online examination system of ASRB.
- Generating question papers for NET and ARS-Prelim.
- Registration of online applications for NET and ARS (Preliminary) examinations including electronic payment gateway.
- Generation and issuance of admit card.
- Test administration software as per ASRB requirement.
- Result processing and issuance of certificates for NET.

The successful implementation of online registration, fee payment, issuance of admit cards modules for NET-2013, ARS-2013 (Preliminary) and NET-2014(1) examinations under the project demonstrated that online process has drastically reduced the number of mandays normally required for manual/conventional application process and reduction of errors in data entry. Online registration process has saved approximately 3-4 weeks in application processing and examination fees adjustment. Moreover the online submission of application is convenient to candidates for applying from different parts of the country.

7. Process/ Product/Technology Developed

S. No.	Process/Product/Technology Developed	Adoption/ Validation/ Commercialization, etc.	Responsible Partner
1.	Software for digitalization of Question bank	Implemented successfully and approximately 72000 questions have been digitized in the question bank.	ASRB, New Delhi
2.	Software for Question paper generation.	Question papers have been generated successfully for conducting NET-2014(1).	ASRB, New Delhi
3.	Software for online registration	Implemented successfully for conducting NET-2013, ARS-2013 (Preliminary) and NET-2014(1) examinations.	ASRB, New Delhi
4.	Software for generating & issuance of admit cards online		
5.	Software for generating and issuance of online certificates for successful candidates	Implemented successfully for conducting NET-2013 and NET-2014 (I)	ASRB, New Delhi
6.	Test administration software for conducting Online examination.	Implemented successfully for conducting first online exam NET-2014(1).	ASRB, New Delhi and 23 consortium partners.
7.	Software module for result processing & declaration	To be implemented and test for processing result for NET-2014 (1)	ASRB, New Delhi



8. Patents (Filed/Granted)

S. No.	Title of Patent	Inventor(s) (Name & Address)	Filed/Published/Granted (No./Date)	Responsible Partner
NIL				

S. No.	Linkages developed (Name & Address of Organization)	Date/Period From-To	Responsible Partner
NIL			

9. Linkages and Collaborations

10. Status on Environmental and Social Safeguard Framework

Not Applicable

11. Constraints, if any and Remedial Measures Taken

- I. Delay in supply of Hardware & Software at the examination centers and data centre was the major constraint in timely completion of the project. The project team was constantly behind the service provider responsible for supplying the Hardware & Software as well as conducting the Online Examination system. However, the service provider was unable to keep the deadlines mutually agreed by ASRB and them. The strategy of maintaining consistent pressure at optimum level on outsourced agency and continued pursuance worked out in delivery of hardware and software ultimately.
- II. Coordinating the supply of equipment to different parts of the country was the challenging task. The challenges inherent in the centralized procurement of services, stores and delivery to all the 23 institutes while adhering to individual state Government rules and regulations have been overcome in record time in spite of several odds.

12. Publications

(As per format of citation in Indian Journal of Agricultural Sciences)

A. Research papers in peer reviewed journals

S. No.	Authors, Title of the paper, Name of Journal, Year, Vol. & Page No.	NAAS Ratings	Responsible Partner
NIL			

B. Books/ Book chapters/ Abstracts/ Popular articles, Brochures, etc.

S. No.	Authors, Title of the papers Name of Book/ Seminar/ Proceedings/Journal, Publisher, Year, Page No.	Responsible Partner
1.	Geetika Kakkar, Nagarjuna, Eswara Prasad, A.P. Ruhil and S.K. Bandyopadhyay, 2013, "Training Manual for Online Examination System", ASRB, Total pages – 73	ASRB, New Delhi
2.	Nagarjuna, 2013, "Technical Manual for Online Examination System", ASRB, Total Pages – 61	ASRB, New Delhi
3.	ASRB, 2013, "Standard Operating Procedure for Computer Based Online Test", ASRB, Total Pages – 19	ASRB, New Delhi

13. Media Products Developed/Disseminated

S. No.	CD, Bulletins, Brochures, etc. (Year wise)	No. of Copies	Distribution	Responsible Partner
NIL				

14. Meetings/Seminars/Trainings/Kisan Mela, etc. organized

S. No.	Details of Meetings/ Seminars/Trainings, etc.	Duration (From-To)	No. of Personnel Trained	Budget (₹ in lakhs)	Organizer (Name & Address)
1	Launch Workshop of the NAIP-sub project "Developing, Commissioning, Operating and Managing an Online System For NET/ARS-Prelim Examination in ASRB ICAR" at NASC, New Delhi.	01.07.2010 (one day)	80	Expenditure incurred by ASRB	ASRB, KAB-I, Pusa, New Delhi –110 012
2.	Training Program on Online Examination system for Nodal officers & Technical officers at IARI, New Delhi.	21.11.2013 – 22.11.2013 (two days)	46	5.98021	ASRB, KAB-I, Pusa, New Delhi –110 012
3.	Field training on the "Server and application management for Online Examination system" for Nodal officers & Technical officers at respective examination centers	December, 2013	50-60	Part of Project Implementation	ASRB, KAB-I, Pusa, New Delhi –110 012

15. Participation in Conference/ Meetings/Trainings/ Radio talks, etc.

S. No.	Details of Meetings/ Seminars/Trainings/Radio talk, etc.(Name &Address)	Duration (From-To)	Budget (₹)	Participant (Name & Address)
NIL				



16. Foreign Trainings/Visits:

S. No.	Name, Designation, Address of the Person	Visit/Training/ Seminar its Place, Organization and Duration (From-To)	Dates of Seminar Delivered and Report Submitted on Return	Follow up Action	Total Cost (₹)
NIL					

17. Performance Indicators

S. No.	Indicator	Total Numbers
1.	No. of hits on the sub-project website per month	5213
2.	Number of knowledge products developed: a. e-courses b. e-learning modules	NA
3.	Digitization of number of Questions in Question bank	72000
4.	Enhanced knowledge sharing and public awareness activities carried out	3
5.	Development of linkages with a. National organisations b. International organisations	23 NIL
6.	No. of articles downloaded from CeRA subscribed publishers	NIL
7.	Training of critical mass (no. of experts trained)	46
8.	Number of scientists trained overseas in the frontier areas of science	NIL
9.	Number of scientists trained overseas in consortium-based subject areas	NIL
10.	No. of scientists participated in conference/seminar etc. abroad	NIL
11.	Number of novel tools/protocols/methodologies developed	Developed/ customised 7 modules of software
12.	Publications Articles in NAAS rated journals Manuals	NIL 3

18. Employment Generation (man-days/year)

S. No.	Type of Employment Generation	Employment Generation up to End of Sub-project	Responsible Partner
NIL			

19. Assets Generated

(i) Equipment

S. No.	Name of the Equipment with Manufacturers Name, Model and Sr. No.	Year of Purchase	Quantity (Nos.)	Total Cost (INR/USD)	Responsible Partner
Data Centre (DC), ASRB, New Delhi					
1.	Server – LDAP Model: HP BL 460c G8 Server Serial No.: SGH314RRTX	2013	1	5315 (USD)	ASRB, New Delhi
2.	Servers – Application Model: HP BL 460c G8 Server Serial No.: SGH314RRV4, SGH314RRTD	2013	2	10630 (USD)	
3.	Servers –Database Model: HP BL 460c G8 Server Serial No.: SGH314RRTL, SGH314RRTJ	2013	2	13176 (USD)	
4.	Back-up-Servers Database Model: HP BL 460c G8 Server Serial No.: SGH314RRTP, SGH314RRTF	2013	2	13176 (USD)	
5.	Servers – EMS Model: HP BL460c G8 Server Serial No.: SGH33638MW, SGH33638MY	2013	2	10630 (USD)	
6.	Servers - Web layer Model: HP BL460c G8 Server Serial No.: SGH314RRTS, SGH314RRTV	2013	2	10630 (USD)	
	<u>Accessories along with servers:-</u>				
	I. UPS Model: Delta J Series (3 1), Capacity: 10KVA Serial No.: C1212900100WH, C12B00120WH		2		
	II. Server Rack Model: President, Size 37U Serial No.: SRS2013211120, SRS2013110711		2		
	III. Internet connectivity (Reliance) • Modem: Model: Reliance MTA6328-1BE2S, Serial No.: 6337074140 • UBR Antenna - SSID: DC DELHI WPSIY015 OU2001, V-TX/RX (2.4 MHz), 4mbps speed.		1		
	IV. Outdoor Access Point for wireless connectivity between DC & DR Model: Nano Bridge GP-A240-050 Serial No.: 13270092749		1		
7.	Storage Model: HP P6350 EVA Storage Serial No.: SGA309004X, 5C7251POC3	2013	1	31556 (USD)	
8.	Tape Library Model: HP MSL4048 2 LTO-5 3000 FC Serial No.: FLX453250	2013	1	13287 (USD)	
9.	Backup Software Model: HP Data Protector	2013	1	1945 (USD)	

S. No.	Name of the Equipment with Manufacturers Name, Model and Sr. No.	Year of Purchase	Quantity (Nos.)	Total Cost (INR/USD)	Responsible Partner
10.	Firewall Model: Checkpoint 4200 Serial No.: 1243B02664, LR201209006077, 1243B02663, LR201209006075	2013	2	51958 (USD)	
11.	Network Intrusion Prevention Systems (NIPS) Model: Radware Defensepro Serial No.:31905217, 31905215, 31905244.	2013	2	157432 (USD)	
12.	Link Load Balancer Model: Array APV 600 Series Serial No.:131G3356, 131G3357	2013	2	58142 (USD)	
13.	Router Model: HP MSR 30-40 Serial No.: CN34B9V04L, CN35D0V05Y	2013	2	9672 (USD)	
14.	Layer-3 Core Switch Model: HP 5500-24G EI Serial No.: CN34B9VD1R, CN34B9V04M	2013	2	4690 (USD)	
15.	Layer-2 Switch Model: HP 2530-24G Serial No.: CN2BFP738N, CN2BFP7229, CN2BFP71W1, CN2BFP70Q6	2013	4	4036 (USD)	
16.	Blade Chassis Model: HP Blade system c7000 Serial No.: SGH314RL0H	2013	1	24913 (USD)	
17.	SAN Switch – 8/24 FC Model: HP 8/24 SAN SW Serial No.: CZC310U61E/CZC310U639	2013	2	32400 (USD)	
18.	Router - Fibre Channel over IP (FCIP) Model: HP HSTNM-N022 Serial No.: MY5305N054	2013	1	4429 (USD)	
19.	Desktops Model: HP Pro 6300 Serial No.: SGH323PW9G, SGH323PVYR, SGH323PVXM, SGH323PVXX, SGH323PWGR	2013	5	3125 (USD)	
20.	Host Intrusion Prevention System (HIPS)+Anti-Virus (AV) Version: Trend Micro Deep Security 7.5 Serial No.: DX3AMME8XLCZZZ	2013	11	891000 (INR)	
21.	Anti-Virus (AV) Version: Trend Micro Office Scan 10.6 Serial No.: ENOVWWEAXLCZZZ	2013	5	6750 (INR)	
22.	Enterprise Management System (EMS) Model: CA Storage Easy 1830, Serial No.: SGH314RJDA	2013	1	6971314(INR)	
23.	MS Server 2012 Enterprise Edition Serial No.: P7305761	2013	13	1101100 (INR)	
24.	MS SQL Server Enterprise Edition 2012 Serial No.:7JQ00256	2013	4	3952008 (INR)	

S. No.	Name of the Equipment with Manufacturers Name, Model and Sr. No.	Year of Purchase	Quantity (Nos.)	Total Cost (INR/USD)	Responsible Partner
25.	MS SQL Server Standard Edition 2012 Serial No.:7JQ00256	2013	2	515332 (INR)	
26.	LDAP licence configured with LDAP Server	2013	2	169400 (INR)	
27.	Window Server CAL 2012 Serial No.: R1804276	2013	7	7742 (INR)	
28.	Media Kit (Web Camera and Headset) Model: i ball	2013	5	5670 (INR)	
30.	Desktops Model: HP M3090 Serial No.: INA047009W, INA04700WS, INA047006D, INA04700FC, INA04700FG, INA0470072, INA0470080, INA04700WD	2011	8	269192 (INR)	
31.	Laptops Model: HP Pavilion DV6-3043TX Serial No.: INA029022M, INA02901T4	2011	2	149467 (INR)	
32.	UPS Model: Luminous Capacity: 1.0 KVA each Serial No.: B03L050002847A6, B03L050002R48A6, B03L050002A26A6, B03L050002825A6, B03L050002687A6, B03L050002608A6, B03L0500026A6, B03L050002690A6.	2011	8	50076 (INR)	
33.	WiFi – Router Model: Net Gear- N150	2014	1	2400 (INR)	
Disaster Recovery (DR), IARI, New Delhi					
1.	Servers –Database Model: HP BL 460c G8 Server Serial No.: SGH314RRV0, SGH314RRV2 <u>Accessories along with servers:-</u> I. UPS Model: Delta J Series (3 1), Capacity: 10KVA Serial No.: C121320023NH II. Server Rack Model: President, Size 42U Serial No.: SRS2013241450 III. Outdoor Access Point for wireless connectivity between DC & DR Model: Nano Bridge GP-A240-050 Serial No.: 13270092760	2013	2111	10630 (USD)	ASRB, New Delhi
2.	Storage Model: HP P6350 EVA Storage Serial No.: SGA3090045, 5C7252P44M	2013	1	31556 (USD)	
3.	Backup Software Model: HP Data Protector	2013	1	1945 (USD)	
4.	Tape Library Model: HP MSL4048 2 LTO-5 3000 FC Serial No: FLX453297	2013	1	13287 (USD)	



S. No.	Name of the Equipment with Manufacturers Name, Model and Sr. No.	Year of Purchase	Quantity (Nos.)	Total Cost (INR/USD)	Responsible Partner
5.	Firewall Model: Checkpoint 4200 Serial No.: XXXXXXX728	2013	1	25979 (USD)	
6.	Network Intrusion Prevention Systems (NIPS) Model: Radware Defensepro Serial No.: 31905216	2013	1	78716 (USD)	
7.	Link Load Balancer Model: Array APV 600 Series Serial No.: 1311G335S	2013	1	29071 (USD)	
8.	Router Model: HP MSR 30-40 Serial No.: CN35D0V05Y	2013	1	4836 (USD)	
9.	Layer-3 Core Switch Model: HP 5500-24G EI Serial No.: CN34B9V04C	2013	1	2345 (USD)	
10.	Layer-2 Switch Model: HP 2530-24G Serial No.: 6C36E5-E29600	2013	1	1009 (USD)	
11.	Blade Chassis Model: HP Blade system c7000 Serial No.:SGH314RFR6	2013	1	24913 (USD)	
12.	SAN Switch – 8/24 FC Model: HP 8/24 SAN SW Serial No.: CJC310U61L, CJC310U61M	2013	2	32400 (USD)	
13.	Router - Fibre Channel over IP (FCIP) Model: HP HSTNM-N022 Serial No.: MY5305N057	2013	1	4429 (USD)	
14.	Desktops Model: HP Pro 6300 Serial No.; SGH323PWSS, SGH323PWJY, SGH323PWR6, SGH323PTW2, SGH323PW9R	2013	5	3125 (USD)	
15.	Host Intrusion Prevention System (HIPS)+Anti-Virus Version: Trend Micro Deep Security 7.5 Serial No.: DX3AMME8XLCZZZ	2013	2	162000 (INR)	
16.	Anti-Virus (AV) Version: Trend Micro Office Scan 10.6 Serial No.: ENOVWWEAXLCZZZ	2013	5	6750 (INR)	
17.	Media Kit (Web Camera and Headset) Model: i ball	2013	5	5670 (INR)	
18.	Window Server CAL 2012 Serial No.: R1804276	2013	5	5530 (INR)	

S. No.	Name of the Equipment with Manufacturers Name, Model and Sr. No.	Year of Purchase	Quantity (Nos.)	Total Cost (INR/USD)	Responsible Partner
Online examination centers (for center wise break up see Annexure - II)					
1.	Servers – Application Model: HP DL380p G8 Server	2013	46	353970 (USD)	All examination centers across India
2.	Desktops Model: HP Pro 6300	2013	2020	1262500 (USD)	
3.	Router Model: HP MSR 20-20	2013	23	18032 (USD)	
4.	Layer-2 Switch Model: D link DGS 3120-24TC/EI	2013	86	68542 (USD)	
5.	Media Kit (Web Camera and Headset) Model: i ball	2013	2020	2290680 (INR)	
6.	Anti-Virus (AV) Version: Trend Micro Office Scan 10.6 Serial No.: ENOVWWEAXLCZZZ	2013	2020	2727000 (INR)	
7.	UPS Model: Delta J Series	2013	24	7422192 (INR)	
8.	Microsoft Office Standard 2013 Serial No.: 2110256	2013	46	316710 (INR)	
9.	Window 2012 Server Standard Serial No.: P7305761	2013	46	1187076 (INR)	
10.	Window Server CAL 2012 Serial No.: R1804276	2013	2020	2234120 (INR)	

Equipments procured at Online Examination centers

S. No.	Name of the Equipment with Manufacturers Name, Model and Sr. No.	Year of Purchase	Quantity (Nos.)	Total Cost (INR/USD)	Responsible Partner
1	Split AC with Stabilizer Model: Voltas, Capacity: 1.5 ton	2011	2	00.74	Data Centre (DC) ASRB, New Delhi
2	Split AC Model: Hitachi, Capacity: 2 ton	2014	8	03.31	
3	DG Set Model: Kirloskar, Capacity: 125KVA	2014	1	10.50	
4	IP Based camera	2014	1	00.19	
5	Split AC Capacity: 2 ton	2012	2	01.02	IARI, New Delhi
6	DG Set Model: Sudhir, Capacity: 180KVA	2013	1	11.50	
7	IP Based camera	2013	10	09.49	
8	Split AC Capacity: 2 ton	2011	2	00.67	NAARM, Hyderabad
9	Split AC Model: Hitachi, Capacity: 2 ton	2011	2	00.66	NDRI, Karnal
10	Split AC Capacity: 1.5 ton	2011	2	00.61	CIFE, Mumbai
	Split AC	2014	2	0.80	
	DG Set	2014	1	9.79	
	IP Based camera	2014	17	7.82	
11	Split AC Model: Blue Star, Capacity: 2 ton	2010	02	00.64	DMAPR, Anand
12	DG Set Model: Kirloskar, Capacity: 180KVA	2013	01	14.98	
13	IP Based camera	2013	01	04.64	
14	Split AC Capacity: 2 ton	2013	06	02.06	
15	Split AC Model: Godrej, Capacity: 2 ton	2010	2	00.79	IISR, Lucknow
16	DG Set Model: Kirloskar, Capacity: 125KVA	2013	1	09.50	
17	Split AC Model: LG, Capacity: 2 ton	2010	02	00.78	CIAE, Bhopal
18	Split AC Model: Blue Star, Capacity: 2 ton	2013	6	02.99	TANUVAS, Chennai
19	Split AC Model: Blue Star, Capacity: 2 ton	2010	2	00.78	
20	DG Set	2013	1	12.65	
21	IP Based camera	2013	7	03.99	
22	Split AC Model: Hitachi, Capacity: 2 ton	2010	2	00.65	CIFRI, Barrackpore

S. No.	Name of the Equipment with Manufacturers Name, Model and Sr. No.	Year of Purchase	Quantity (Nos.)	Total Cost (INR/USD)	Responsible Partner
23	DG Set Model: Kirloskar, Capacity: 200KVA	2013	01	00.15	
24	IP Based camera	2013	03	07.00	
25	Split AC with Stabilizer Model: Voltas, Capacity: 2 ton	2011	02	00.66	CIFA, Bhubaneswar
26	Split AC Model: Voltas, Capacity: 2 ton	2010	2	00.61	CSWCRTI Dehradun
27	Split AC Model: Voltas, Capacity: 2 ton	2013	3	02.16	
28	DG Set Model: Kirloskar	2013	1	13.00	
29	IP Based camera	2013	7	01.70	
30	Split AC with Stabilizer Model: Voltas	2010	02	00.80	ICAR RC NEH, Barapani
31	IP Based camera	2013	7	05.15	
32	Split AC	2010	2		CMFRI, Cochin
33	DG Set	2013	1	15.33	
34	IP Based camera	2013	7	06.94	
35	Split AC	2010	2	00.63	NIANPBangalore
36	IP Based camera	2013	7	01.10	
37	Split AC Model: LG, Capacity: 2 ton	2010-11	2	00.70	CAZRI, Jodhpur
38	Split AC Capacity: 2 ton	2013-14	6	02.48	
39	DG Set Model: Kirloskar, Capacity: 180KVA	2013-14	1	13.49	
40	IP Based camera	2013-14	7	01.96	
41	Split AC Model: LG	2010	02	00.67	CPRI, Shimla
42	Split AC Model: Voltas	2013	02	00.98	
43	DG Set Model: Kirloskar	2013	01	14.99	
44	Split AC Model: Voltas	2010	02	00.67	CIPHET, Ludhiana
45	Split AC Model: Panasonic	2013	-	02.45	
46	DG Set Model: Sudhir Genset	2013	1	12.24	
47	Split AC	2013	3	1.35	CITH, Srinagar
	DG Set	2013	1	14.97	
	IP Camera	2013	5	1.57	



S. No.	Name of the Equipment with Manufacturers Name, Model and Sr. No.	Year of Purchase	Quantity (Nos.)	Total Cost (INR/USD)	Responsible Partner
48	Split AC Model: Voltas, Capacity: 2 ton	2010	02	00.78	SKUAST-Jammu
49	Split AC	2014	02	00.99	
50	DG Set	2014	1	14.75	
51	IP Based camera	2014	5	04.99	
52	Split AC Model: Voltas, Capacity: 2 ton	2010	02	00.72	ICAR-RC ER Patna
53	DG Set	2013	1		
54	Split AC	2013	6	02.82	CICR, Nagpur
55	DG Set	2013	1	15.88	
56	IP Based Camera	2013	10	03.95	
57	Split AC Model: LG, Capacity: 1.5 ton	2010	2	00.62	CARI, Port Blair
58	DG Set	2013	1	14.23	

(ii) Works

S. No.	Particulars of the Work, Name and Address of Agency Awarded the Work	Year of Work Done	Quantity (Nos.)	Total Cost (₹ Lakhs)	Responsible Partner
1.	Construction of NOEC & Data Centre (DC) M/s Inder Builder New Delhi	2010	-	19.80	ASRB, New Delhi
2.	Computer Tables & Chairs	2010-11	123	00.83	IARI, New Delhi
3.	Renovation of ASRB Examination Hall, LBS Building, IARI, Delhi	2011	01	19.11	
4.	Computer Tables and Chairs	2011	240	7.56	NAARM, Hyderabad
5.	Fabrication of furniture Tables & chairs M/s Best Furniture & Gift Palace, Gohana	2011	125	5.996	NDRI, Karnal
6.	LAN work M/s ARTEK, Nehru Palace, New Delhi	2010	125	7.447	
7.	Civil work M/s Randhir Singh, 803/13, UE, Karnal	2011	-	3.138	
8.	Electric work including cooling system M/s Gurunanak Airtek, Karnal	2011	-	5.639	
9.	Computer table & Chair from M/s Work Place, Mumbai	2010	120	6.00	CIFE, Mumbai
10.	Construction of Online Exam Centre at Old Campus, Provided fixing electrical items, & LAN Related work	2011	-	24.56	
11.	Computer Table	2010-11	-	2.69	DMAPR, AnandIISR, Lucknow
12.	Computer Chairs	2010	100	1.38	
13.	Construction of civil / Electrical / LAN cabling works, CPU TROLLY	2010	-	19.85	

S. No.	Particulars of the Work, Name and Address of Agency Awarded the Work	Year of Work Done	Quantity (Nos.)	Total Cost (₹ Lakhs)	Responsible Partner
14.	Construction of civil / Electrical / LAN cabling works, Networking Cabinet 24U/ 600x1000mmD, Furniture etc.	2010-13	1	37.08	
15.	Computer Tables (Furniture), M/s Volga Interiors, Bhopal	2010-11	25	2.58	CIAE, Bhopal
16.	Computer Chairs (Furniture), M/s Impression Office Automation, Bhopal	2010-11	100	1.94	
17.	Office Table, Chairs, Book case, etc. (Furniture), M/s Nadir Traders, Bhopal	2010-11	1 set	00.96	
18.	Renovation to Exam Centre (Civil works)	2010	-	19.99	TANUVAS, Chennai
19.	Furnishing with Table and chairs	2010	-	5.5	
20.	Renovation of old rooms (Flooring and painting), Electrical works, LAN facility in examination hall, Wall Paneling.	2010	01	13.28	CIFRI, Barrackpore
21.	2.0 tone split AC Make Hitachi Model No. RAU023HQDG	2010	2	00.65	
22.	200 KVA Higher rating DG Set, Three Phase, 415 V with AMF control M/s Elmech Engeineers, 1402 Chiranjiv Towers, 43 Nehru Place, Delhi	2013	01	00.15	
23.	Furniture 10 Sheets table and chairs M/s Nexgen Furniture Systems Pvt. Ltd., 242, Andul Road, howrah-711109	2010	01	5.49	
24.	Procurement of Revolving Computer Chairs DURIAN INDUSTRIES LTD. Bhubaneswar Showroom: Plote no. 2060 (part), 2061, 2062, samantrapur, Bhubaneswar - 751002, Dist: Khurda, Orissa.	2010-11	125	4.49	CIFA, Bhubaneswar
25.	Procurement of Executive Chairs Durian Industries Ltd. Bhubaneswar Showroom: Plote no. 2060 (part), 2061, 2062, samantrapur, Bhubaneswar - 751002, Dist: Khurda, Orissa	2011	06	00.82	
26.	Procurement of Podium, 24 port Network switch-Dlink 10/100), Printer, Software (Adobe Professional & Photoshop Cs5), Pen drive.	2011	-	1.36	
27.	Procurement of AC 2 ton make-Voltas with Voltage Stabilizer. M/s RAJ ELECTRONICS Plote No. SCR-26, Janpath. Bapuji Nagar, Bhubaneswar.	2011	02	00.66	
28.	Renovation of Hall Shri. Ajay Goel 394/13, Mohit Nagar, GMS Road Dehradun	2010	01	16.99	CSWCRTI Dehradun
29.	Installation of internal network with peripherals (Technomax Solutions F-23 First floor, Meedo plaza, Dehradun-248001(U.K))	2011	LS	1.44	



S. No.	Particulars of the Work, Name and Address of Agency Awarded the Work	Year of Work Done	Quantity (Nos.)	Total Cost (₹ Lakhs)	Responsible Partner
30.	Single Information Outlet with SMB, shutter facility, Technomax Solutions F-23 First floor, Meedo plaza, Dehradun-248001(U.K)	2011	110	00.99	
31.	LAN related work	2011-13	-	2.28	
32.	Electrical connection with network connectivity.	2010	01	4.33	ICAR RC NEH, Barapani
33.	Fitting of floor tiles in the hall passage and building back side floor, drain making fitting and fixing of signboard	2011	01	2.80	
34.	Civil work related to online examination	2010	-	20.03	CMFRI, Cochin
35.	Providing and fixing computer table for server room(M/s Space Makers, Kochi)	2010	03	00.16	
36.	Computer chairs for server room (M/s Space Makers, Kochi)	2010	02	00.04	
37.	Electrical accessories, wiring and installation (M/s Space Makers, Kochi)	2010	-	5.66	
38.	Supply and installation of network accessories (M/s Space Makers, Kochi)	2010	-	3.62	
39.	Computer chairs for server room (M/s Space Makers, Kochi)	2010	02	00.04	
40.	M/s Gupta Fabricators Jodhpur (Civil works), M/s SK Enterprises Jodhpur, (LAN works) and M/s Maheshwar Enterprises, Jodhpur (Electrical works)	2010-11	-	19.74	CAZRI, Jodhpur
41.	Furniture (Computer tables & chairs)	2010-11	100	2.66	
42.	Electrification of examination hall, LAN work in examination hall, Blinds, Fixing of wooden tables	2010	-	9.78	CPRI, Shimla
43.	EngrAV (Trend Micro)ed plate (M/s Kawasaki Arts, 20, Block No. 4, SDA Complex, Kasumpti, Shimla)	2011	01	00.15	
44.	Table & Chair (M/s Wardhan Corp., 7, The Mall, Shimla)	2011	01	00.37	
45.	Computer chair (M/s Wardhan Corp., 7, The Mall, Shimla)	2010	23	00.57	
46.	Computer Table	2010	50	1.59	CIPHET, Ludhiana
47.	Computer Chair	2010	50	1.14	
48.	Supply of workstations 43 Nos. (Furniture and fixture)M/S United Mtoor Cycles, Residency Road, Srinagar	2011	43	2.72	CITH, Srinagar
49.	Cabinet, Elixir 19" enclosures, Electric items, Glass frame, Civil works	2013	01	7.93	SKUAST-Jammu
50.	Supply and installation of LAN items. Agency:- M/S Viraj Information Pvt. Ltd., 213/BI, 2 nd Floor, North Block, Bahu Plaza, Rail Head Complex Jammu	2010	-	2.12	

S. No.	Particulars of the Work, Name and Address of Agency Awarded the Work	Year of Work Done	Quantity (Nos.)	Total Cost (₹ Lakhs)	Responsible Partner
51.	Furniture Computer chairs and computer table Agency:- Narang Furniture Co. C/o Narang Complex , National Highway Gangyal Jammu.	2010	50	2.75	
52.	Customized computer table and Chairs	2010	52	2.74	ICAR RC ER, Patna
53.	Computer Table 18mm laminated board Vendor-M/s. Pravesh Associate, Nagpur	2011	32	1.36	CICR, Nagpur
54.	Computer chairs Vendor-M/s. Pravesh Associate, Nagpur	2011	48	1.18	
55.	Wooden table, Executive Chair, visitor chair Vendor-M/s.Pravesh Associate, Nagpur	2011	04	00.17	
56.	Refurbishing of Committee Room and Computer Cell by providing wall paneling with pre laminated particle board and replacement of ceiling board in Phase II office building at Garacharma Farm.M/s Bharat Udyog, 160 MG Road, Junglighat, Port Blair.	2010	01	3.42	CARI, Port Blair
57.	Computer table, M/s Methodex Systems Ltd.	2010	18	1.03	

(i) Revenue Generated

S. No.	Source of Revenue	Year	Total amount (₹)	Responsible Partner
NIL				

(ii) Livestock

S. No.	Details of Livestock (Breed, etc.)	Year of Procurement/Production	Nos.	Total Cost (₹)	Responsible Partner
NIL					

20. Awards and Recognitions

S. No.	Name, Designation, Address of the Person	Award/ Recognition (with Date)	Institution/ Society Facilitating (Name & Address)	Responsible Partner
NIL				

21. Steps Undertaken for Post NAIP Sustainability

- Provision of fund for conducting online exams and maintaining the system from ASRB.
- Ownership of the system after completion of the project.

22. Possible Future Line of Work

The facilities created for the conduct of online examinations for NET/ARS (Preliminary) at ASRB and 23 examination centers can also be used for conducting any other computer based test by ASRB/ICAR. The modalities of engaging a service provider for conducting such examinations will be decided by ASRB/ICAR following the regular business rules. At the time of finalizing this report, ASRB has already initiated the process of conducting the CBT for recruitment to the posts of Assistant Grade staff of ICAR. Dialog has been initiated with the current service provider of the online examination project to explore their capacity, willingness and terms of reference to conduct such tests other than NET/ARS (Preliminary) for which they are under obligation to conduct for three years.

The system in place has also the potential for resource generation by hiring out the facilities. ASRB will explore possibilities of hiring out this facility to any service provider of repute for the purpose of resource generation in future. The modalities of such outsource plan will be required to be developed by ASRB following the ICAR policy and regulation in vogue.

However, the in-house (within the NARS) facilities created for online examination is slightly inadequate for the number of applicants for these examinations in ICAR (18245 applicants for NET-2014(1) against overall installed capacity of 2020 nodes). As a result, more number of days are required in each centre for each of the NET or ARS examinations. Possibilities will be explored in future to expand the capacity by hiring examination centres with adequate facilities to reduce the number of days of online examination.

23. Personnel

		From – To (DD-MM-YYYY)
Research Management (CL)		
1.	CL-Dr. C. D. Mayee, Chairman, ASRB, New Delhi	01-03-2010 – 15-09-2011
	CL-Dr. Gurbachan Singh, Chairman, ASRB, New Delhi	13-10-2011 – 30-06-2014
Scientific / Technical (CPI, CCPI, Nodal Officers others)		
2.	CPI -Dr. M. J. Modayil, Member, ASRB, New Delhi	01-03-2010 – 11-03-2012
	CPI-Dr. S. K. Bandyopadhyay, Member, ASRB, New Delhi	14-05-2012 – 30-06-2014
	Mr. G. P. Sharma, DDF & COE (Online)	01-03 2010 – 30-04-2012
	Co-PI-Dr. A.P. Ruhil, Principal Scientist	19-04-2012 – 30-06-2014
3.	CCPI-Dr. H.S. Gupta, Director, IARI, New Delhi	31-03-2010 – 30-06-2014
	Nodal Officer-Dr. H. Chandrasekharan, PS & Incharge	31-03-2010 – 31-05-2013
	Nodal Officer-Dr. A.K. Mishra, Sr. Scientist	31-03-2010 – 30-06-2014
4.	CCPI-Dr. Surender Lal Goswami, Director, NAARM, Hyderabad	21-11-2011 – 30-06-2014
	Nodal Officer-Dr. M. Balakrishnan, Sr. Scientist	01-10-2012 – 30-06-2014
	Nodal Officer-Dr. M.A. Basith, T.O. (T-8)	17-06-2010 – 30-06-2014

		From – To (DD-MM-YYYY)
5.	CCPI-Dr. A. K. Srivastava, Director, NDRI, Karnal Nodal Officer-Dr. A.K. Sharma, Sr. Scientist Nodal Officer-Mr. Naresh Kumar Dahiya, T. O. (T-6)	31-03-2010 – 30-06-2014 02-11-2012 – 30-06-2014 02-11-2012 – 30-06-2014
6.	CCPI- Dr. R.K. Singh, Director, IVRI, Bareilly Nodal Officer-Dr. Mozammel Hoque, Principal Scientist	05-02-2014 – 30-06-2014 31-03-2010 – 30-06-2014
7.	CCPI-Dr. W.S. Lakra, Director, CIFE, Mumbai Nodal Officer-Dr. N.K. Chadha, Principal Scientist & COE Nodal Officer-Dr. Shrinivas Jahageerdar, Sr. Scientist	01-09-2010 – 30-06-2014 30-09-2010 – 30-06-2014 18-10-2012 – 30-06-2014
8.	CCPI- Dr. Satyabrata Maiti, Director, DMAPR, Anand CCPI- Dr. P. Manivel, Director (Acting), Anand Nodal Officer-Dr. N. Srinivas Rao, Senior Scientist Nodal Officer-Dr. Raghuraj Singh, Scientist Nodal Officer-Dr. R. Nagaraja Reddy, Scientist	31-03-2010 - 30-04-2014 01-05-2014 – 30-06-2014 31-03-2010 – 27-07-2013 28-07-2013 – 15-01-2014 16-01-2014 – 30-06-2014
9.	CCPI- Dr. Sushil Solomon, Director, IISR, Lucknow Nodal Officer-Dr. P.K. Bajpai, Principal Scientist Nodal Officer-Dr. S.S. Hasan, Sr. Scientist	22-12-2011 – 30-06-2014 01-07-2012 – 30-06-2014 01-04-2010 – 30-06-2014
10.	CCPI-Dr. Pitam Chandra, Director, CIAE, Bhopal Nodal Officer-Mr. B.K. Garg, Principal Scientist Nodal Officer-Dr. Karan Singh, Senior Scientist	01-04-2010 – 30-06-2014 01-04-2010 – 30-06-2014 01-04-2010 – 30-06-2014
11.	CCPI-Dr. S. A. Asokan, Dean, TANUVAS, Chennai Nodal Officer-Dr. S. Selvam, Professor Nodal Officer-Dr. G. Kathiravan, Associate Professor	01-10-2012 – 30-06-2014 14-07-2010 - 30-06-2014 30-12-2013 – 30-06-2014
12.	CCPI-Dr. A.P. Sharma, Director, Barrackpore Nodal Officer-Dr. Karunakaran, Scientist Nodal Officer-Mrs. Sucheta Majumder, Technical Officer	17-06-2010 - 30-06-2014 17-06-2010 – 30-06-2014 17-06-2010 - 30-06-2014
13.	CCPI-Dr. P. Jayashankar, Director, CIFA, Bhubaneswar Nodal Officer-Mr. A.S. Mahapatra, Scientist Nodal Officer-Mr. P. Lalrinsanga, Scientist,	01-07-2011 – 30-06-2014 17-10-2012 – 30-06-2014 17-10-2012 – 30-06-2014
14.	CCPI-Dr. P.K. Mishra, Director, CSWCRTI, Dehradun Nodal Officer-Dr. D.R. Sena, Senior Scientist Nodal Officer-Er. S. Shrimali, Senior Scientist	11-07-2011 – 30-06-2014 12-07-2010 – 10-07-2011 18-01-2012 - 30-06-2014
15.	CCPI-Dr. S.V. Ngachan, Director, NEH Region, Barapani Nodal Officer-Mr. N. Uttam Singh, Scientist Nodal Officer-Dr. Aniruddha Roy, Scientist	01-04-2010 – 30-06-2014 01-04-2010 – 30-06-2014 01-04-2010 – 30-06-2014
16.	CCPI-Dr. C.S. Prasad, Director, NIANP, Bangalore Nodal Officer-Dr. Atul Kolte, Scientist, Nodal Officer-Dr. M. Bhagat, Scientist	06-07-2010 – 30-06-2014 19-01-2013 – 30-06-2014 21-08-2013 – 30-06-2014
17.	CCPI-Dr. A. Gopalkrishnan, Director, CMFRI, Cochin Nodal Officer-Dr. J. Jayasankar, Sr. Scientist	31-07-2013 – 30-06-2014 17-09-2010 – 30-06-2014
18.	CCPI-Dr. M.M. Roy, Director, CAZRI, Jodhpur Nodal Officer-Dr. R.S. Tripathi, Principal Scientist	01-04-2010 – 30-06-2014 03-05-2010 – 30-06-2014
19.	CCPI-Dr. S.K. Pandey, Director, CPRI, Shimla CCPI-Dr. B.P. Singh, Director, CPRI, Shimla Nodal Officer-Dr. Sanjeev Sharma, Sr. Scientist Nodal Officer-Dr. Shashi Rawat, Sr. Scientist	01-04-2010 – 30-06-2010 01-07-2010 – 30-06-2014 01-04-2010 – 30-06-2014 01-04-2010 – 30-06-2014

		From – To (DD/MM/YYYY)
20.	CCPI-Dr. R. K. Gupta, Director, CIPHET, Ludhiana Nodal Officer-Dr. R.K. Gupta, Professor & Head Nodal Officer-Ms. Leena Kumari, Scientist	14-02-2014 – 30-06-2014 26-10-2012 – 13-02-2014 18-07-2013 – 30-06-2014
21.	CCPI-Dr. Nazeer Ahmed, Director, Srinagar Nodal Officer-Mr. Eshan Ahad, Technical Officer (T-5) Nodal Officer-Ms. Mubeena, Technical Officer (T-1)	31-03-2010 – 30-06-2014 31-03-2010 – 30-06-2014 27-08-2010 – 30-06-2014
22.	CCPI-Dr. S.K. Gupta, Dean, SKUAST-J, Jammu Nodal Officer-Dr. Mohamad Asraf Malik, HOD Nodal Officer-Miss. Esha Manhas, Computer Assistant	07-06-2010 – 30-06-2014 04-11-2013 – 30-06-2014 04-10-2013 – 30-06-2014
23.	CCPI-Dr. B.P. Bhatt, Director, Patna Nodal Officer-Dr. R.C.Bharati, Principal Scientist Nodal Officer-Dr. Manibhushan, Scientist (SS)	01-01-2011 – 30-06-2014 09-08-2006 – 30-06-2014 31-03-2010 – 30-06-2014
24.	CCPI-Dr. K.R. Kranthi, Director, Nagpur Nodal Officer-Dr. P.K. Chakrabarty, H.O.D. Crop Prod. Div. Nodal Officer-Er. Gautam Majumdar, Scientist & Incharge AKMU	17-06-2010 – 30-06-2014 17-06-2010 – 05-10-2013 11-03-2011 – 30-06-2014
25.	CCPI-Dr. S. Damroy, Director, CARI, Port Blair Nodal Officer-Dr. M. Sankaran, Sr. Scientist Nodal Officer-Mrs. Ani Dath, Sr.Technical Officer	18-08-2012 – 30-06-2014 28-02-2013 – 30-06-2014 31-03-2010 – 30-06-2014
Administrative staff		
26.	Mrs. Veena Sikka, Assistant, ASRB, New Delhi	10-05-2010 – 30-06-2014
Contractual		
27.	Mrs. Geetika Kakkar, RA, ASRB, New Delhi	16-06-2010 – 30.04.2013
28.	Mrs. Rita Jain, RA, ASRB, New Delhi	01-06-2013 – 30-06-2014
29.	Mr. Anil Kumar, SRF, ASRB, New Delhi	28-06-2010 – 30-06-2014
30.	Mr. Ankur Sharma, Project Assistant, ASRB, New Delhi	28-06-2010 – 30-06-2014
31.	Mr. Ajay Kumar Thakur, Project Assistant, ASRB, New Delhi	06-06-2013 – 30-06-2014

24. Governance, Management, Implementation and Coordination

A. Composition of the various committees (CIC, CAC, CMU, etc.)

S. No.	Committee Name	Chairman (From-To)	Members (From-To)
1.	CIC	NIL	NIL
2.	CAC	NIL	NIL
3.	CMU	NIL	NIL

B. List of Meetings organized (CIC, CAC, CMU, etc.)

S. No.	Details of the meeting	Date	Place & Address (Where meeting was organized)
1.	CIC	NIL	NIL
2.	CAC	NIL	NIL
3.	CMU	NIL	NIL

Part III: Budget and its Utilization

STATEMENT OF EXPENDITURE (Final) (Period from 1-04-2010 to 31-03-2014)

Sanction Letter No.	: 30(59)/2009/ASRB/NAIP/O&M dated 31-03-2010
Total Sub-project Cost	: ₹ 3050.00 Lakhs
Sanctioned/Revised Sub-project cost (<i>if applicable</i>)	: ₹ 3710.50 Lakhs
Date of Commencement of Sub-project	: 31-03-2010
Duration	: From 31-03-2010 to 30-06-2014

Funds Received & Refunded in each year of ASRB, New Delhi

Year	Received (₹ in lakhs)	Refunded (₹ in lakhs)
I Year	52.00000	00.00
II Year	50.00000	43.73510
III Year	2121.84250	1898.66548
IV Year	1214.24362	130.23461
V Year	1077.76884	496.78794
Total	4515.85496	2569.42313

Net amount received	: ₹ 4515.85496 – ₹ 2569.42313 = ₹ 1946.43183 Lakhs
Bank Interest received on fund (<i>if any</i>)	: ₹ 67.49068 Lakhs
Total expenditure	: ₹ 1946.43183 Lakhs

Funds Received & Refunded in each year of ASRB, New Delhi & 23 Consortia Partners

Year	Received (₹ in lakhs)	Refunded (₹ in lakhs)
I Year	609.65000	07.20940
II Year	60.51620	89.77101
III Year	2129.23732	1904.60373
IV Year	1749.71245	242.10277
V Year	1099.02606	551.11854
Total	5648.14203	2794.80545

Net amount received	: ₹ 5648.14203 – ₹ 2794.80545 = ₹ 2853.33658 Lakhs
Bank Interest received on fund (<i>if any</i>)	: ₹ 67.49068 Lakhs
Total expenditure	: ₹ 2791.45468 Lakhs



Head-wise Expenditure of ASRB, New Delhi

Sanctioned Heads	Funds Allocated* (in Lakhs)	Funds Released (₹ in Lakhs)					Total Release	Expenditure Incurred (₹ in Lakhs)					Total Expenditure (in Lakhs)	Balance as 30.06.2014
		1st Year	2nd Year	3rd Year	4th Year	5th Year		1st Year	2nd Year	3rd Year	4th Year	5th Year		
A. Recurring Contingencies														
(1) TA	26.38624	05.00000	02.00000	05.00000	05.00000	00.00000	17.00000	01.47607	02.66367	00.47253	00.41265	00.00000	05.02492	
(2) Workshops	09.00000	02.00000	00.00000	03.00000	03.50000	00.00000	08.50000	00.00000	00.00000	00.00000	05.98021	00.00000	05.98021	
(3) Contractual Services/RA/SRF	33.80935	06.00000	00.00000	05.17500	05.00000	02.93200	19.10700	05.99078	07.64684	08.81857	08.81949	02.93200	34.20768	
(4) Operational	455.43179	10.00000	48.00000	88.50000	89.79362	00.00000	236.29362	00.22477	14.19372	00.03452	22.91435	-37.02113	00.34623	
Sub-Total of A (1-4)	524.62738	23.00000	50.00000	101.67500	103.29362	02.93200	280.90062	07.69162	24.50423	09.32562	38.12670	-34.08913	45.55904	
B. HRD Component														
(5) Training	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	
(6) Consultancy	68.13299	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	
Sub-Total of B (5-6)	68.13299	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	
C. Non-Recurring														
(7) Equipment	1907.80796	07.20000	00.00000	2010.00000	1091.75000	1074.83684	4183.78684	05.36367	00.00000	183.61679	1059.02591	632.16104	1880.16741	
(8) Furniture	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	
(9) Works (new renovation)	19.91938	20.00000	00.00000	00.00000	00.00000	00.00000	20.00000	19.91938	00.00000	00.00000	00.00000	00.00000	19.91938	
(10) Others (Animals, Books, etc.)	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	
Sub-Total of C (7-10)	1927.72734	27.20000	00.00000	2010.00000	1091.75000	1074.83684	4203.78684	25.28305	00.00000	183.61679	1059.02591	632.16104	1900.08679	
D. Institutional Charges**														
Grand Total (A+B+C+D)	2571.68771	52.00000	50.00000	2121.84250	1214.24362	1077.76884	4515.85496	32.40000	24.89023	192.94241	1097.15261	598.07191	1946.43183	00.00000

Head-Wise Expenditure of ASRB, New Delhi & 23 Consortia Partners

Sanctioned Heads	Funds Allocated* (in Lakhs)	Funds Released (₹ in Lakhs)					Total Release	Expenditure Incurred (₹ in Lakhs)					Total Expenditure (in Lakhs)	Balance as 30.06.2014
		1st Year	2nd Year	3rd Year	4th Year	5th Year		1st Year	2nd Year	3rd Year	4th Year	5th Year		
A. Recurring Contingencies														
(1) TA	26.38624	05.00000	02.00000	05.00000	05.00000	00.00000	17.00000	01.47607	02.66367	00.47253	00.41265	00.00000	05.02492	
(2) Workshops	09.00000	02.00000	00.00000	03.00000	03.50000	00.00000	08.50000	00.00000	00.00000	00.00000	05.98021	00.00000	05.98021	
(3) Contractual Services/RA/SRF	33.80935	06.00000	08.00000	05.17500	05.00000	02.93200	27.10700	05.99078	07.64684	08.81857	08.81949	02.93200	34.20768	
(4) Operational	530.72872	33.00000	49.93169	95.40000	96.36227	00.00000	274.69396	12.56443	23.70216	04.16551	43.25081	-36.21958	47.46333	
Sub-Total of A (1-4)	599.92431	46.00000	59.93169	108.57500	109.86227	02.93200	327.30096	20.03128	34.01267	13.45661	58.46316	-33.28758	92.67614	
B. HRD Component														
(5) Training	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	
(6) Consultancy	68.13299	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	
Sub-Total of B (5-6)	68.13299	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	
C. Non-Recurring														
(7) Equipment	2452.20345	25.60000	00.00000	2010.00000	1620.83909	1096.09406	4752.53315	21.23024	01.02225	183.69779	1294.79314	709.56014	2210.30356	
(8) Furniture	113.24872	111.10000	00.00000	00.00000	-00.06659	00.00000	111.03341	103.88311	00.00000	00.00000	00.00000	00.00000	103.88311	
(9) Works (new renovation)	421.75784	424.00000	00.00000	00.00000	-00.57232	00.00000	423.42768	374.07171	08.81192	00.00000	00.00000	00.00000	382.88363	
(10) Others (Animals, Books, etc.)	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	00.00000	
Sub-Total of C (7-10)	2987.21001	560.70000	00.00000	2010.00000	1620.20018	1096.09406	5286.99424	499.18506	09.83417	183.69779	1294.79314	709.56014	2697.07030	
D. Institutional Charges**	55.23269	02.95000	00.58451	10.66232	19.65000	00.00000	33.84683	00.83701	00.64971	00.09065	00.09744	00.03343	01.70824	
Grand Total (A+B+C+D)	3710.50000	609.65000	60.51620	2129.23732	1749.71245	1099.02606	5648.14203	520.05335	44.49655	197.24505	1353.35374	676.30599	2791.45468	61.88190

Note:

- The expenditure statement includes the expenditure of ASRB & consortium partners up to 30-06-2014. Figures for total expenditure have been compiled based on SOEs received from 23 cooperating centers as maintained by NAIP project unit at ASRB and as submitted by the centers to NAIP directly.
- Above figures are tentative as per statement of expenditures received from respective centres. Final figures are shown by them in their Annual Accounts directly submitted to PIU, NAIP

*As per centre wise revised allocation by NAIP vide letter number 3(59)/2009/ASRB/NAIP/O&M dated September 11, 2013, the total revised sanction amount comes to '3710.50Lakhs whereas the said sanction letter has shown the total amount as '3707.25Lakhs, possible erroneously.

** Institutional charges will be 10% of the recurring contingencies for the Lead Consortium and 5% for Consortia Partners.

PART-IV: Declaration

This is to certify that the final report of the Sub-project has been submitted in full consultation with the consortium partners in accordance with the approved objectives and technical programme and the relevant records, note books; materials are available for the same.

Place: Delhi
Date: 22/07/2014


Signature of consortium Principal Investigator

 CCPI, IARI	 CCPI, NAARM	 CCPI, NDRI	 CCPI, IVRI	 CCPI, CIFE
 CCPI, DMAPR	 CCPI, IISR	 CCPI, CIAE	 CCPI, TANUVAS	 CCPI, CIFRI
 CCPI, CIFA	 CCPI, CSRCRTI	 CCPI, ICAR RC for ER, Patna	 CCPI, NIANP	 CCPI, CMFRI
 CCPI, CAZRI	 CCPI, CPRI	 CCPI, CIPHET	 CCPI, CITH	 CCPI, SKUAST
 CCPI, CICR	 CCPI, CARI	 CCPI, ICAR RC Barapani		







To the best of my knowledge the project has achieved all its objectives and has created a national facility for conducting computer based online tests for NET and ARS examinations at 23 centres.









Comments & Signature of Consortium Leader








Date: 22/07/2014





ANNEXURE-I

Details of Examination Centers established under the project

S no.	Sub-Project Leader and Partners	Infrastructure developed	Numbers/Size/ Capacity	Photographs
1.	ASRB, New Delhi Centre (NOEC)	National Online Examination	—	
2.	IARI, New Delhi	Online Examination Centre	120	
3.	NAARM, Hyderabad	Online Examination Centre	120	
4.	NDRI, Karnal	Online Examination Centre	120	
5.	IVRI, Bareilly	Online Examination Centre	120	
6.	CIFE, Mumbai	Online Examination Centre	120	

S no.	Sub-Project Leader and Partners	Infrastructure developed	Numbers/Size/ Capacity	Photographs
7.	DMAPR, Anand	Online Examination Centre	100	
8.	IISR, Lucknow	Online Examination Centre	100	
9.	CIAE, Bhopal	Online Examination Centre	100	
10.	TANUVAS, Chennai	Online Examination Centre	100	
11.	CIFRI, Barrackpore	Online Examination Centre	100	
12.	CIFA, Bhubaneswar	Online Examination Centre	100	
13.	CSRCRTI, Dehradun	Online Examination Centre	100	

S no.	Sub-Project Leader and Partners	Infrastructure developed	Numbers/Size/ Capacity	Photographs
14.	ICAR RC NEH, Barapani	Online Examination Centre	100	
15.	NIANP, Bangalore	Online Examination Centre	100	
16.	CMFRI, Cochin	Online Examination Centre	100	
17.	CAZRI, Jodhpur	Online Examination Centre	100	
18.	CPRI, Shimla	Online Examination Centre	50	
19.	CIPHET, Ludhiana	Online Examination Centre	50	
20.	CITH, Srinagar	Online Examination Centre	50	

S no.	Sub-Project Leader and Partners	Infrastructure developed	Numbers/Size/ Capacity	Photographs
21.	SKU, Jammu	Online Examination Centre	50	
22.	ICAR RC for ER, Patna	Online Examination Centre	50	
23.	CICR, Nagpur	Online Examination Centre	50	
24.	CARI, Port Blair	Online Examination Centre	20	

ANNEXURE-II

Distribution of hardware and software at 23 online examination centers across India

S. No.	Centre Name	Servers- Application	Desktops/ Terminals	Router	Layer-2 Switches	i ball Multimedia Kit	Anti Virus	UPS (Number and Capacity)	MS Office Std.	Windows 2008 Server Std.
1.	IARI, New Delhi	2	120	1	5	120	120	1 (20 KVA)	2	2
2.	NAARM, Hyderabad	2	120	1	5	120	120	1 (20 KVA)	2	2
3.	NDRI, Karnal	2	120	1	5	120	120	2 (15 & 10 KVA)	2	2
4.	IVRI, Bareilly	2	120	1	5	120	120	1 (20 KVA)	2	2
5.	CIFE, Mumbai	2	120	1	5	120	120	1 (20 KVA)	2	2
6.	PDMAP, Anand	2	100	1	4	100	100	1 (20 KVA)	2	2
7.	IISR, Lucknow	2	100	1	4	100	100	1 (20 KVA)	2	2
8.	CIAE, Bhopal	2	100	1	4	100	100	1 (20 KVA)	2	2
9.	TANUVAS, Chennai	2	100	1	4	100	100	1 (20 KVA)	2	2
10.	CIFRI, Barrackpore	2	100	1	4	100	100	1 (20 KVA)	2	2
11.	CIFA, Bhubaneswar	2	100	1	4	100	100	1 (20 KVA)	2	2
12.	CSRCRTI, Dehradun	2	100	1	4	100	100	1 (20 KVA)	2	2
13.	ICAR RC NEH, Barapani	2	100	1	4	100	100	1 (20 KVA)	2	2
14.	NIANP, Bangalore	2	100	1	4	100	100	1 (20 KVA)	2	2
15.	CMFRI, Cochin	2	100	1	4	100	100	1 (20 KVA)	2	2
16.	CAZRI, Jodhpur	2	100	1	4	100	100	1 (20 KVA)	2	2
17.	CPRI, Shimla	2	50	1	2	50	50	1 (10 KVA)	2	2
18.	CIPHET, Ludhiana	2	50	1	2	50	50	1 (10 KVA)	2	2
19.	CITH, Srinagar	2	50	1	2	50	50	1 (10 KVA)	2	2
20.	SKU, Jammu	2	50	1	2	50	50	1 (10 KVA)	2	2
21.	ICAR RCER, Patna	2	50	1	2	50	50	1 (10 KVA)	2	2
22.	CICR, Nagpur	2	50	1	2	50	50	1 (10 KVA)	2	2
23.	CARI, Port Blair	2	20	1	1	20	20	1 (10 KVA)	2	2



Agricultural Scientists Recruitment Board

(Indian Council of Agricultural Research)

Krishi Anusandhan Bhawan-I, Pusa

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