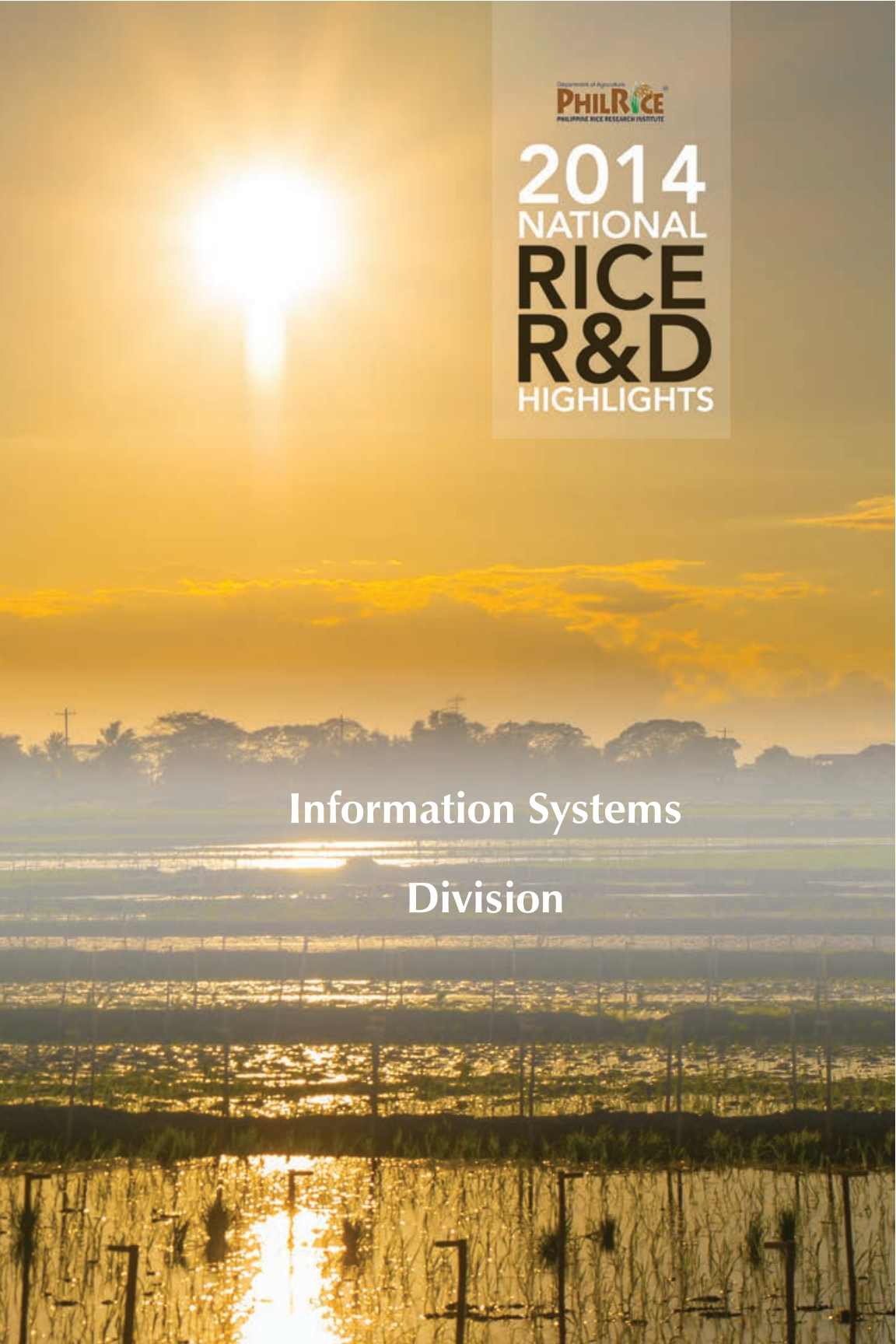
PHILRICE
PHILIPPINE RICE RESEARCH INSTITUTE
2014
NATIONAL
RICE
R&D
HIGHLIGHTS
Information Systems
Division

TABLE OF CONTENTS

INFORMATION SYSTEMS DIVISION

Division Head: JL De Dios

Executive Summary

Data and information fuels PhilRice to generate ideas, technologies, models, materials and practices to attain its goals, while policies, strategies and infrastructures guide.

The need to increase and stabilize food staples production in a more challenging production environment triggers more efforts for us – the research and development workers. Efficient information systems infrastructure and innovative approaches are our tools.

"There will be more productive rice-based farmers in the future in spite of more challenging agricultural production environment and scarce resources because of optimal utilization of data, information and technologies aided by effective Agricultural Information System".

The Information Systems Division (ISD) is aimed to create outputs that mainstream the Agricultural Information Systems to assists researchers, development workers, policy makers, investors and farmers. The following projects are focused to create systems, processes and infrastructures to collect, transmit, filter, process, and distribute data, information, and knowledge to bridge the gaps and information lapses in support to the operations and decision making processes.

I. Gearing Towards Converging Agriculture and Information Systems (AgIS)

Project Leader: AC Arocena, Jr.

This project aims to develop stable, responsive and timely information systems for farm production activity record keeping through the concept of machine to machine communication (M2M) systems of development.

It integrates multiple information technology and systems to provide managers and stakeholders the capability to respond quickly to situations using the following technologies and strategies:

a. Android-based apps for data collection and transmission
b. Combine the mobile applications to online information systems
c. Soil/site characterization using field guide books

II. PhilRice Soil Information System: A Tool for Effective Crop Management

This project aims to: (1) Optimize the soil management subsystem of the PhilRice Database Management Portal (DBMP) for its systematic soil data collection, organization, storage and retrieval procedures; (2) Analyze data and provide with updated and accurate information on the soil resources; (3) A new soil information system model that is comprehensive, more responsive to the needs of the stakeholders and widely accessible; (4) Develop soil series guidebooks for easy identification of the soil based on sub-horizon color, texture, soil pH and other distinguishing characteristics; and (5) Improve and continuously update the new soil management database subsystem.

Highlights:

- Currently updating and improving the Online Soil Identification information system.
- Conceptualized interactive and spatial platform for the Soil Information System.
- Restructured tables and matrices.

Generated soil series and rice suitability maps

- Characterized 41 Soils Series.
- Characterized 30 soil series across target provinces.

Developed Guide books/E-books

- Developed prototype of Cagayan and Aurora
- Started draft for Nueva Vizcaya and Apayao

Soil Characterization and Validation

Conducted field validation and pedological characterization of different soil series of Misamis Oriental (2 series), Maguindanao (2 series), Sultan Kudarat (1 series), Zamboanga Del Norte, Del Sur, and Sibugay (13 series), Agusan Del Norte and Del Sur; Bukidnon (7 series), and North and South Cotabato (16 series)

- Processed 185 soil samples for analyses of physico-chemical characteristics;
- Consolidated soil survey reports of other provinces and secondary soils data for analysis and guidebook development

of Ilocos Norte, Ilocos Sur, and La Union.

Guidebook Development and Publication

- Acquired International Book Number (ISBN) and eBook number of soil series field guidebook for the provinces of Aurora, Cagayan, Negros Occidental and Negros Oriental was approved and released dated October 9, 2014;

• Aurora	ISBN 987-971-9081-88-3 ISBN 987-971-9081-92-0 (EBook)
• Cagayan	ISBN 987-971-9081-89-0 ISBN 987-971-9081-93-7 (EBook)
• Negros Occidental	ISBN 987-971-9081-90-6 ISBN 987-971-9081-94-4 (EBook)
• Negros Oriental	ISBN 987-971-9081-91-3 ISBN 987-971-9081-95-1 (EBook)

Figure 1. ISBN approved cover of guidebooks.

Database Management and Improvement

- Improved design of the PhilRice Soil Information System (PSIS) has been conceptualized and ready for implementation from the existing database system at the DBMP portal. It will adopt interactive and spatial platform of sharing and displaying soil information data. This platform will focus on the soil series identification process by province level using computers and eventually as mobile applications. Spatial data interpretation and presentation will be done in a provincial and municipal

level specifically on soil series profile location and distribution. This includes integration of soil series characteristics into rice suitability maps and tables.

- Complete set of soil data for Aurora and Cagayan provinces are ready for uploading which include 31 soil series profile descriptions, physical and chemical properties, crop suitability, rice productivity index, taxonomic classification, and soil management recommendations. For Ilocos Norte, Ilocos Sur, and Apayao target, 31 soil series description, chemical and physical properties including its taxonomic classifications were already encoded. Consolidated soil series profile characteristics, geographic locations/descriptions and soil profile/landscape pictures of additional twenty-nine validated soil series from Samar- Leyte (19), Mindoro (5) and Palawan (5) are also available.

Figure 2. Sample screenshot of conceptualized design improvement of Philippine Soil Information System

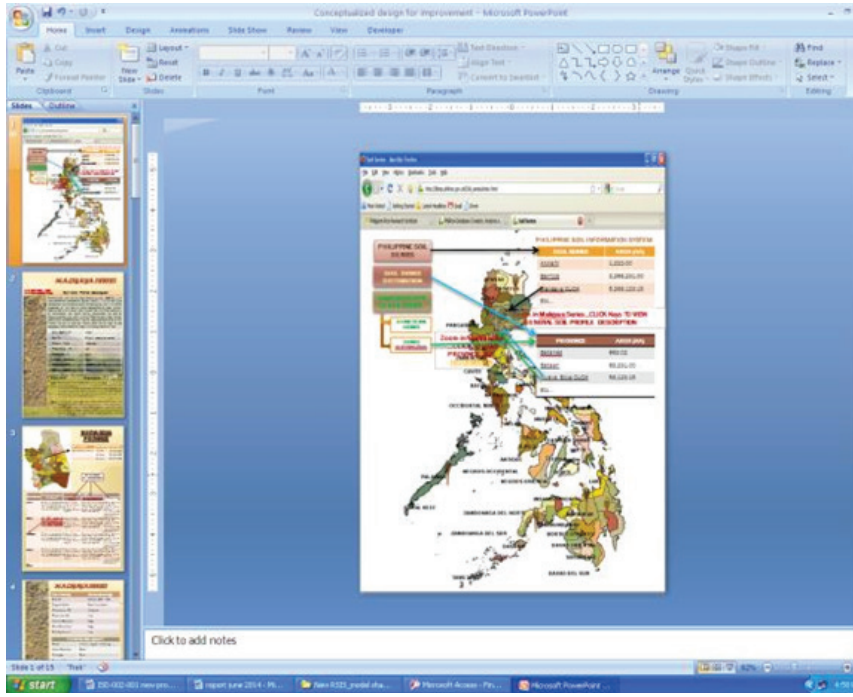

Figure 3. Sample screenshot of conceptualized design improvement of Philippine Soil Information System

Advancing the Information Systems for Research and Development

Objectives:
1. Develop and deploy resilient agricultural information systems to collect and transmit data using mobile devices using the existing communication infrastructures.

2. Develop Information System which can directly organize and present intelligence data in multi-format such as GIS, tabular, and graphs which can be downloaded in structured data format.

3. Develop an integrated management and client consoles for faster and easier data and information sharing.

Highlights:

Development of Online and mobile of Palayabangan database system

- Quick field data acquisition and management IS for rice crop used for Palayabangan was developed
    a. Online and Smartphone Apps
    b. Developed the Android apps for Soil Series Identification
    c. Initial concept for the type of M2M systems to be developed next semester

Web Application

- Front End
    a. Addressed all the issues encountered (All Stations)
    b. Enhance the functionality for faster access and the GUI
    c. Optimized the process and enhance the error trapping functionality
    d. Development of the system is at 100%
    e. System is already deployed and tested for 2 seasons
    f. Customized alert, interface and images
    g. Storing data first in temporary storage before storing to main database
    h. All process is recorded (IP address, location)

- Back end Admin Panel
    a. Development of the system is about 100%
    b. Developed the admin panel for the front end system
    c. Normalized all databases of front and back end system
    d. Centralized querying and storing of data from the main database
    e Computerized the process of creation of database and program for the next season
    f. All the logs and action is being recorded in each system (front end) index by program id
    g. All the control for user's privilege, program access, and item management is done here.

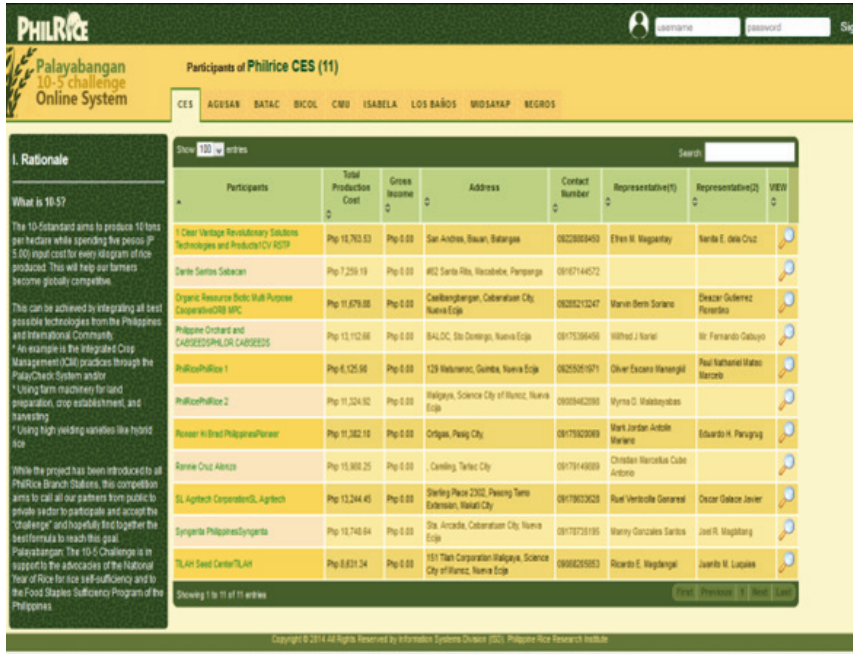

Figure 4. The main page of the Palayabangan IS

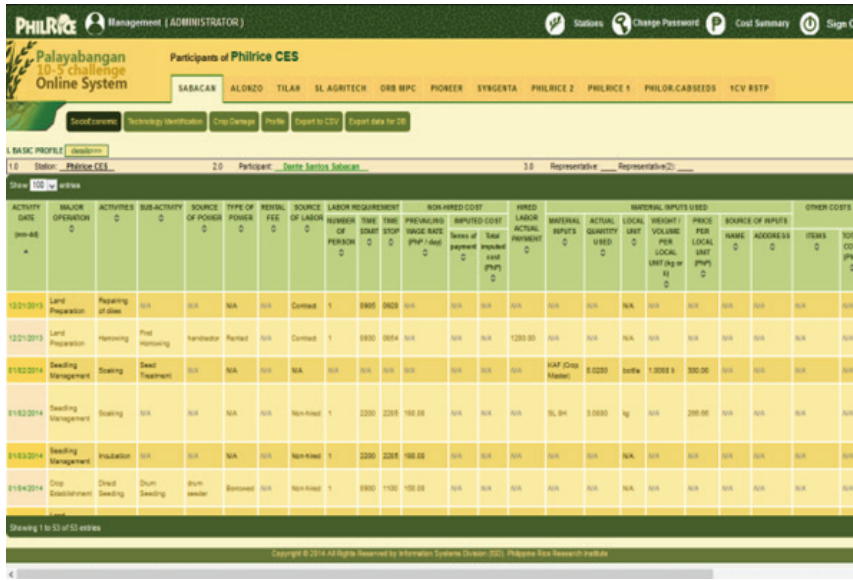

Figure 5. The socio-economic page of the Palayabangan IS

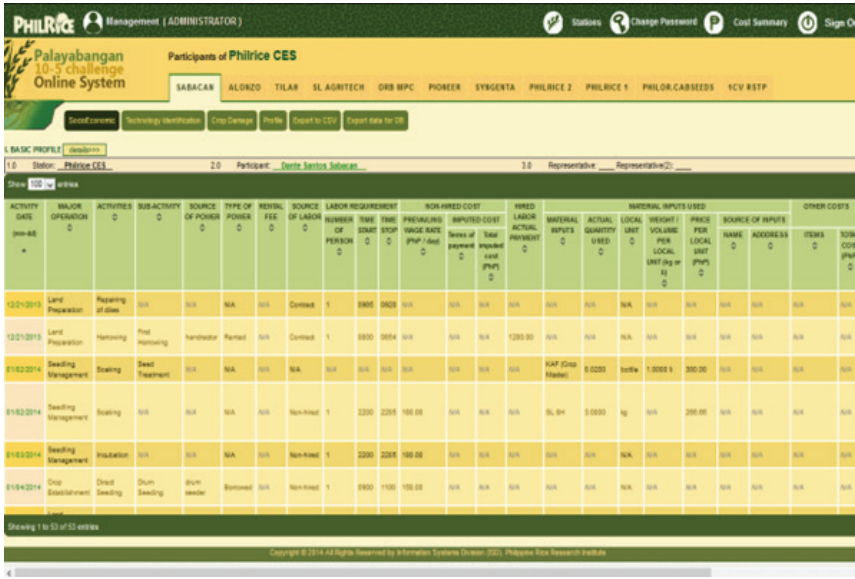

Figure 6. The technology identification page of the Palayabangan IS

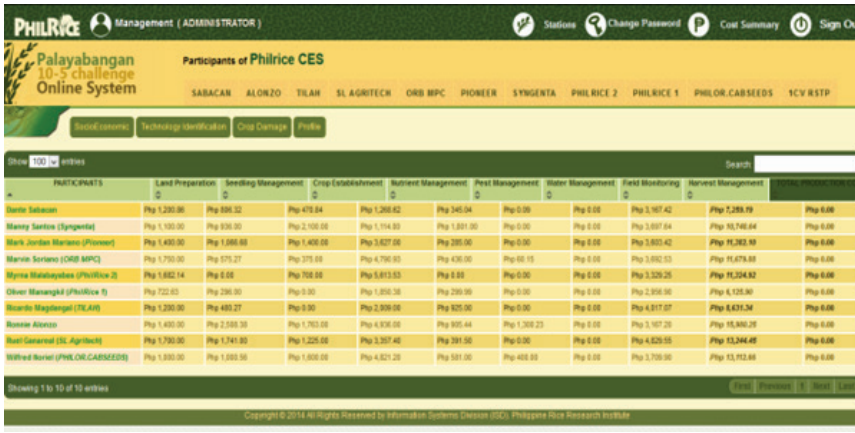

Figure 7. The production cost summary page of the Palayabangan IS

Mobile Application

- Development of the system is at 100%
- Local storage of data in SQLite
- Data can be exported in CSV format
- Dynamic functionality the same as what can be seen in Web application
- The Application is test in Negros Station

- Data is transmitted in the form of SMS
- Data can be viewed in tabular format (Sent and Unsent)
- Data can be determine if sent or not
- GUI is user friendly
- Has log in module for security to tag the monitors sending the data

Documentation of the System

Development of Mobile Application for Soils series identification

- Development of the system application is at 100%
- Data is stored in SQLite database
- Data can be exported in CSV format
- Data is transmitted in the form of SMS
- It has the GPS functionality before saving the data
- Data can be viewed in tabular (Sent and Unsent)
- Data can be determine if sent or not

Development of automated field water monitoring and control system

- Developed a prototype of sensor-based water monitoring system
- Data can be transmitted via wireless local area network to the server
- Received data are stored into an SQL database system
- Prototype is ready for deployment on actual field conditions for further testing and validation

Sustaining and Extending the PhilRice Data and Information Portal

Objectives:
Establish data warehouse for R&D in compliance with the data sharing guidelines and modify the structure of the Rice Data and Information Portal.

a. To implement the redesign webpage
b. Normalize databases
c. Optimize existing sub-systems

Highlights:

- Updated and improved Rice Data and Information Porta focused on the redesign of the main page that will serve as a template for most of the component sub-systems.

- Established a format for the redesigned main page.

- Redesigned and restructured the Web Page and Database structure.

- Started normalizing the database for the Rice Statistics IS.
- Establish a process of data capture to storage involving different stations/divisions/program and other stakeholders.
- Transitional flow has been established for the new design.

The following were the subsystem that has been overhauled for better performance and presentation:

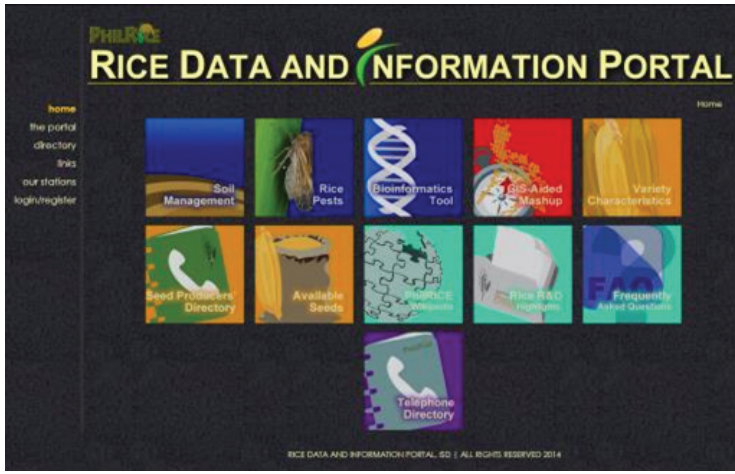

Figure 8. The new main page of the portal

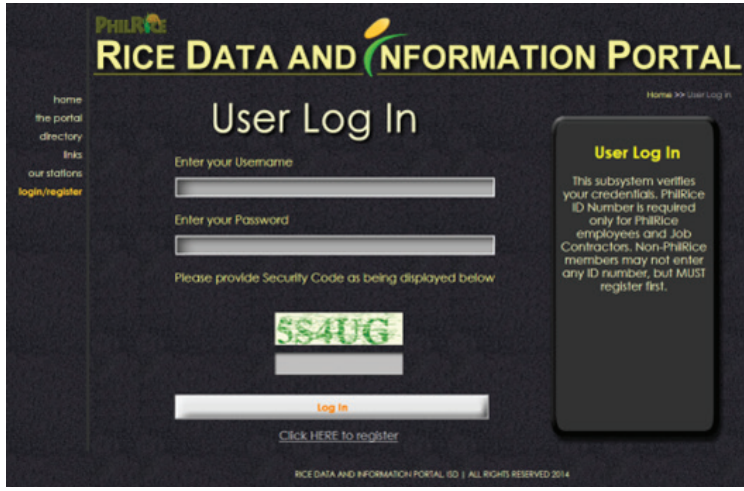

Figure 9. The log-in page

I. Rice R&D Highlights subsystems

Figure 10. The new R&D Highlights main page

Figure 11. Search page by author of the system

II. Telephone Directory subsystem

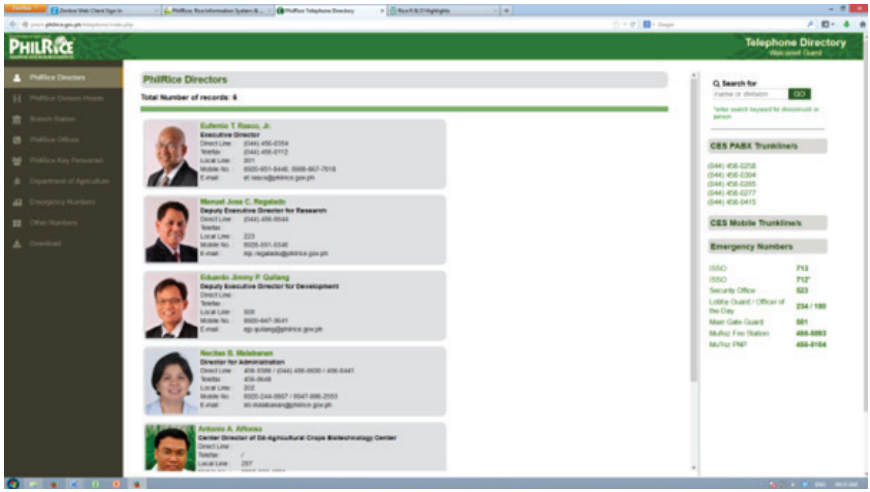

Figure 12. The new main page of the system

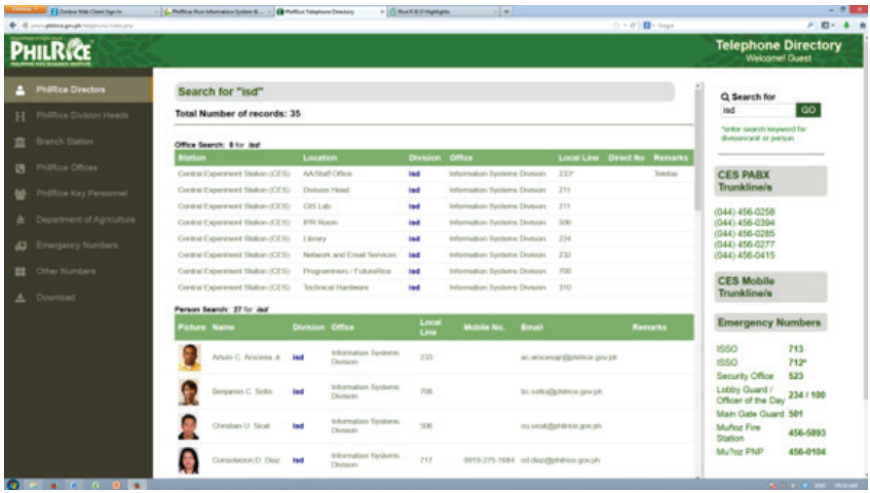

Figure 13. The search result main page of the system

III. The Soil Management subsystems

Figure 14. The new main page of the system

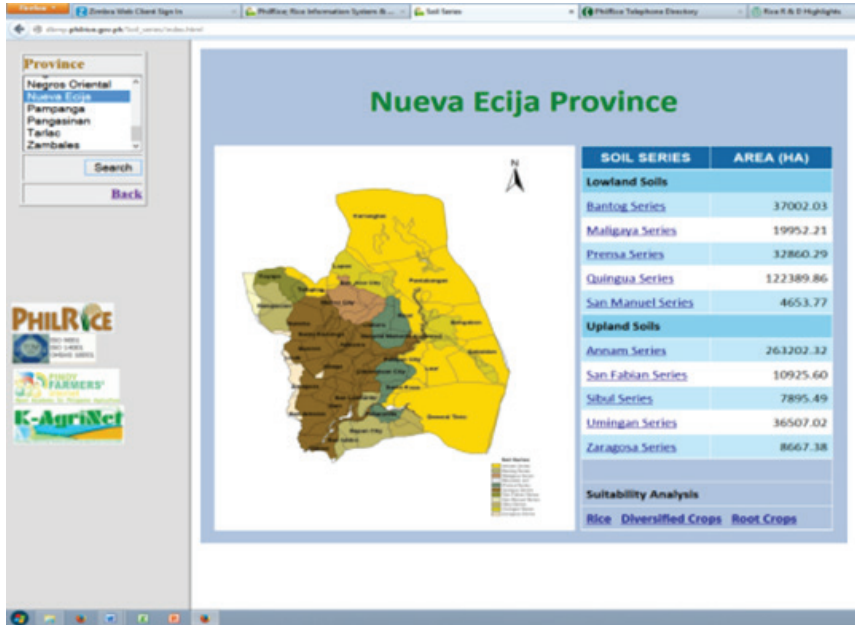

Figure 15. The search result main page of the system

III. Corporate Data Management and Information Systems Solutions (CORE)

A practical and smart information system that helps in strategic planning, management, operational control and transactional processing is very important. This project aims to 1) upscale the current information system to meet the needs and standards of emerging technologies; 2) provide the organization with timely, reliable and useful information necessary for decision making; 3) design and formulate training, policies, guidelines and ethics system; and 4) establish partnership and/or network collaboration with other government agencies and research and development institutions.

Redesign and Improvement of PhilRice Corporate Management System (HRIS Module of PRAB)

Objectives:
1. Develop a stable and Functional HRIS that will assist the everyday administrative and record keeping of human resource of PhilRice on:

2. Monitoring workforce's compliance to government rules and regulations, Compiling and consolidating pertinent documents;

3. Processing of personnel compensation and benefits; Supporting personnel skills and knowledge development; and

4. Assisting management in handling staffing arrangements.

Highlights:

- Deployed the Online Application Page at the corporate website, it can be accessed at http://www3.philrice.gov.ph/?page=jobs. The admin panel for posting jobs and applications was manage by HR Recruitment team. The page also accepts submission for general application in case the desired job positions are not yet available. Applicants can store there resume for future references.

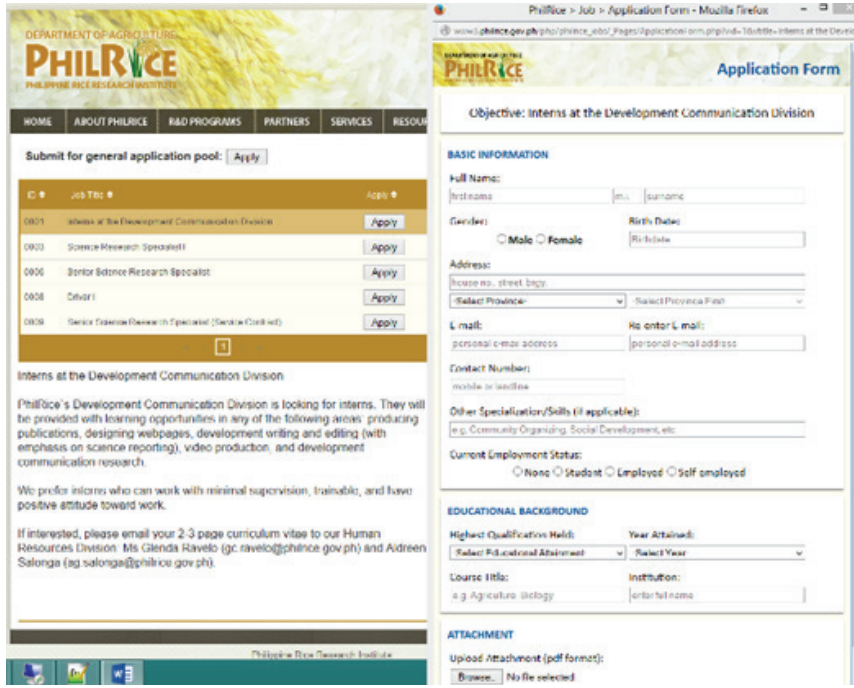

Figure 16. PhilRice online job application page

- Developed an online Daily Time Record Monitoring (DTR) that captures the time logs of personnel from different biometric machines strategically located in campus. The system is being evaluated to ensure optimum data capture accuracy. It features printable DTR, biometric logs, travel order records and automatically filters non-working days.

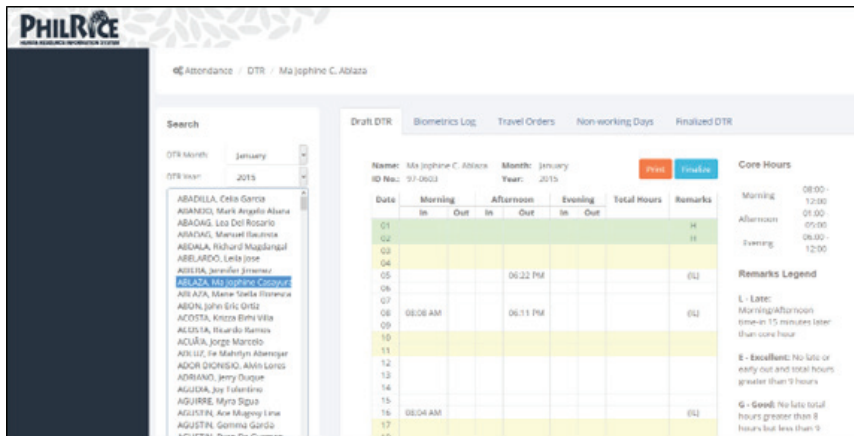

Figure 17. Daily time record monitoring page

- Developed a web-based Human Resources Information System (HRIS) which is consist of four (4) modules: 1. Personnel Record; 2. Attendance; 3. Compensation and Benefits and; 4. Performance Management (for 2015 target). The system was already integrated with the FMIS employee database. Whenever there's an update on HRIS employee database it will automatically update the FMIS database.

Table I. Developing a web-based human resources information System

Modules	Components/Features	Status
1. Personnel Record	a. Employee Profile	Majors functions (add/edit, delete, view/list and search) are working and currently used and beta tested by HR. Newly hired staff are already entered and updates of some are currently done by HR online.
	b. Service Record	Finished all the functions but not yet tested by users. This includes employment list, add/edit, view, print, search, and delete.
	c. Files	On going
	d. Reports	On going
2. Attendance	a. Travel Order	Finished and for testing.
	b. Leave	
	c. DTR	Finished and for testing.
3. Compensation and Benefits	a. Tax/ Deductions	Finished, for beta testing and evaluation of users.
	b. Earnings	
	c. Payroll	
	d. Reports	On going

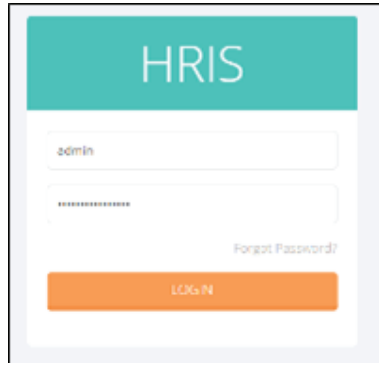

Figure 18A. HRIS login page

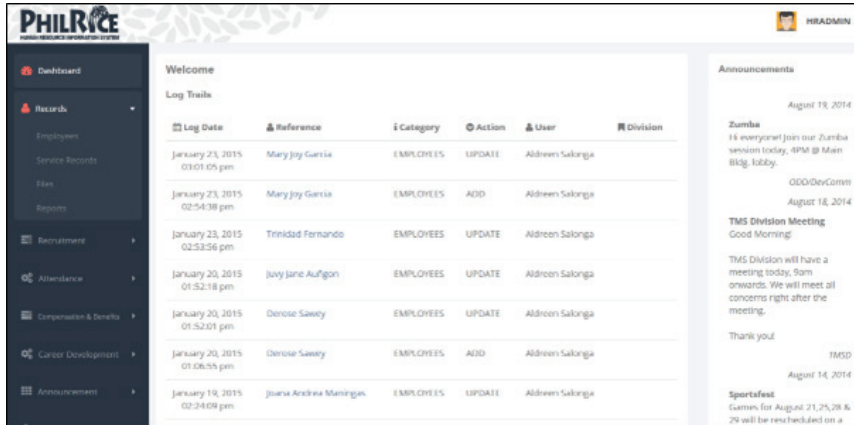

Figure 18B. HRIS dashboard with log trails and announcment panel

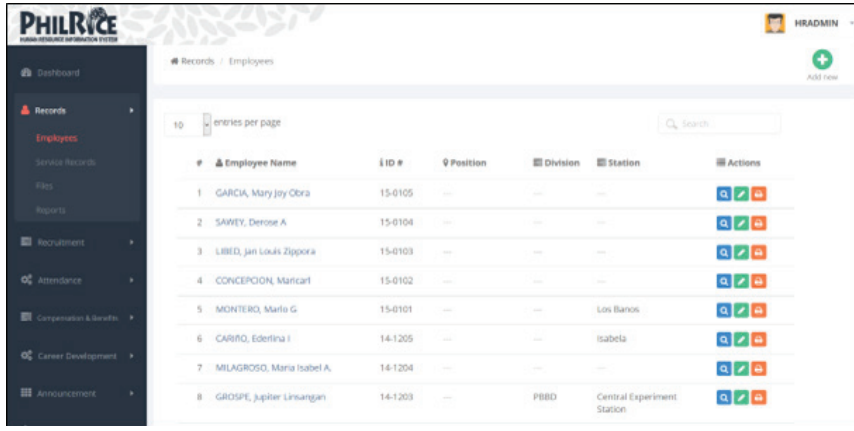

Figure 19. Employee profile landing page

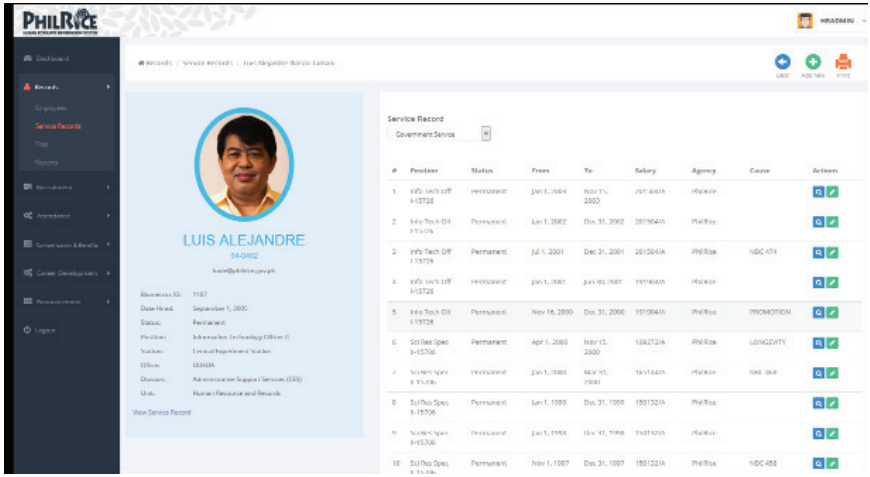

Figure 20. Service record details page

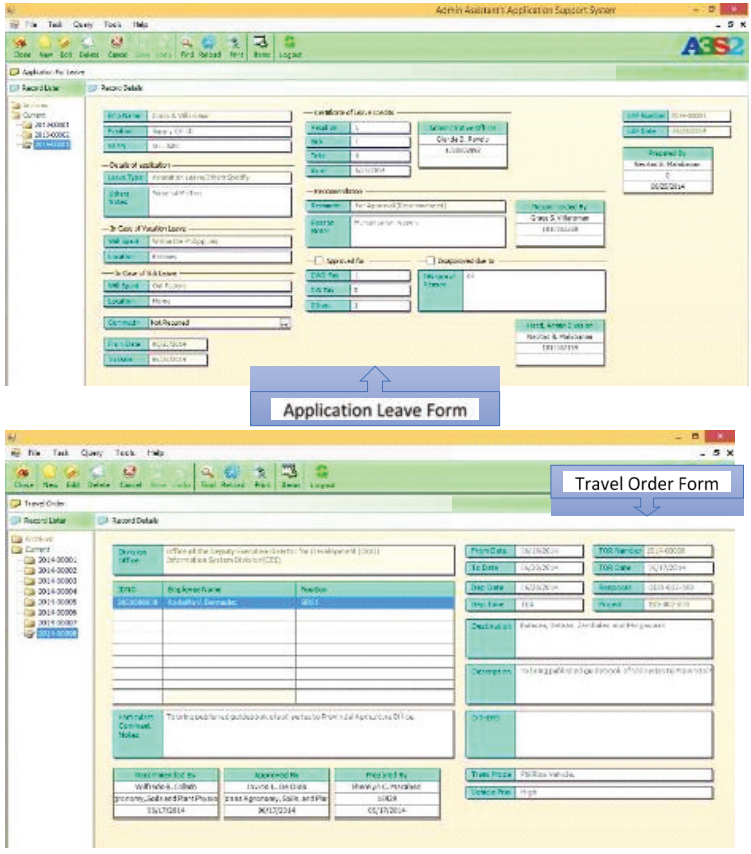

Figure 21. Online application leave and travel order forms

Upscaling the Corporate Web Portals

A corporate website is the most common but important form of web presence today. It also serves as an online storefront and acts as the conveyer of the business brand and message to the world. This study aims the following: 1) Enhancement of PhilRice web (www.philrice.gov.ph), 2)Improvement of PhilRice e-store (store.philrice.gov.ph), and 3) Modernization of Library portal and databases

Highlight:

- Configured the new server for corporate website and conducted hardening and commissioning.

- Checked and transferred the new corporate website to production server. Conducted script optimization, error debugging and testing to conform with the website coding standards and government requirements. Provided technical support on front and back and development.

Figure 22. Home page of the new PhilRice website

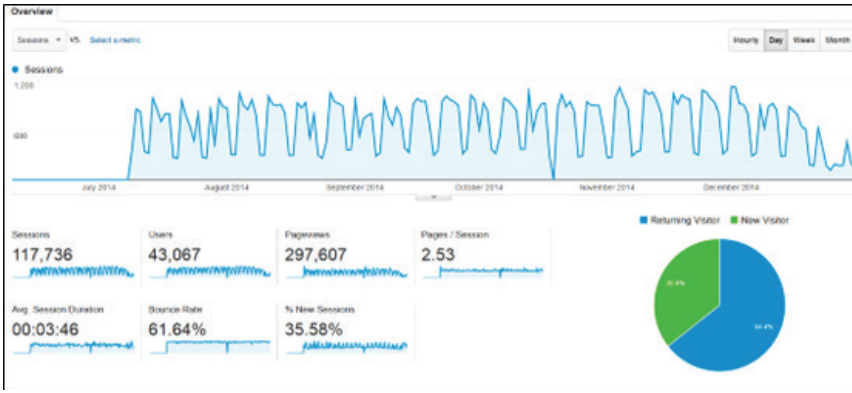

Figure 23. Page views statistics of the former PhilRice website from July-December 2014. Generated from by Google Analytics.

Improvement of PhilRice e-store (store.philrice.gov.ph)

- Configured and conducted user case testing (user, mail, admin setting, front and back-end setting, server settings).
- Checked embedded scripts, settings and functions of the admin panel.
- Conducted 2 sessions of user training and meetings with the website main users. Provided user manual and promptly responded to queries about ecommerce website.
- Populated the ebook page with complete details.
- Fixed some layout alignment, css and bugs.

E-book publication efforts:

EBooks available online

- Field Guide on Harmful and Useful Organisms
- Field Guide on Major Disorders of the Rice Plant in the Philippines
- Nypa Palm: Nature's Gift from the Age of Dinosaurs
- Rice Black Bugs: Taxonomy, Ecology, and Management of Invasive Species
- Insect Pest Diagnostic Kit (English)
- The Unfolding Gene Revolution
- Grain Quality of Philippine Rice
- Aklan Soil Series

Figure 24. PhilRice e-commerce website

EBook promotional website ready for beta testing.

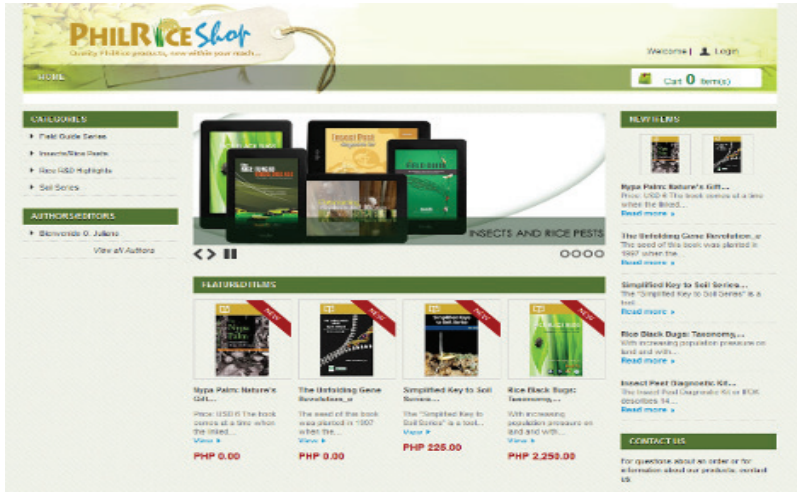

Figure 25. Beta-version PhilRice's promo website

Modernization of Library portal and databases

- Developed the XCardBox system and currently used by Library for data population.

- Ten (10) raw files from DOS machine were already converted. Each file contains almost 2000 records. Five (5) files are for conversion.

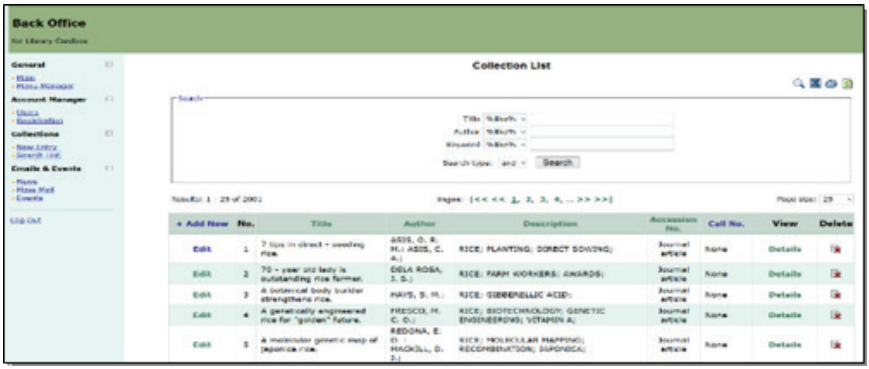

Figure 26. Librabry xcardbox back office for searching available journal and digital clippings

Development of Data Management Solutions for Efficient Utilization of Corporate resources

Objectives:
1. Develop the Corporate Event Management IS;
2. Formulate data management solutions based on data management policies, guidelines and ethics system;
3. Establish SUC collaborative activity or development partnership.

Highlights:

- Improved the eTala, a web based registration and attendance system that was already adopted in different institutional activities such as PhilRice Lakbay Palay, Anniversary and Christmas party, and division seminar at stations. One additional features was the image capture function during registration.

- Developed an electronic raffle system that was adopted by PhilRice in different events. Also a quiz game was developed

and used during the Lakbay Palay exhibits and division seminars at branch stations.

- Provided attendance, profile and summary reports to chairman of Lakbay Palay, Food Committee, Feedback/ Evaluation Committee and VCSO.

- Generated database of participants including profile information.
  - Event profile of 1 year activities

Attendance Summary of Lakbay Palay DS 2014

(based from the database)

Participants	12-Mar	1-Apr	2-Apr	3-Apr	4-Apr
Farmers	-	-	756	3	124
ATs/MAOs	-	-	80	55	3
Students/Faculty	532	-	-	-	-
Others	-	-	7	43	14
Wakins	-	-	485	125	251
subtotal	532	0	1328	226	392
PhilRice Staff/Committee	179	427	195	170	168
TOTAL	711	427	1,523	396	560

***NOTE: Others - participants that does not fall either farmer and/or ATs/MAO category.

Figure 27. Attendance summary generated by eTala

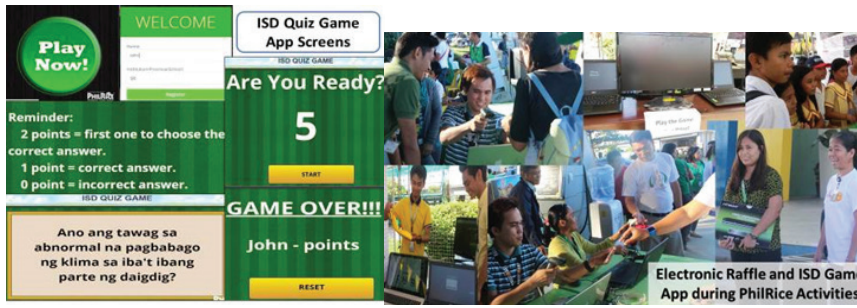

Figure 28. ISD quiz game app screenshot and activities

IV. Business Continuity

The project aimed to develop and maintain a high reliability network and system infrastructures for reliable information systems and databases using state-of-the art information and communications technology. This includes but not limited to the following specific objectives.

1. Create of disaster recovery plan including maintenance and improvements.

2. Perform IT systems and security audits.

3. Upgrade services on network and computer hardware repair and maintenance.

4. Develop and populate the WEB OPAC and IS with new resources for storage and retrieval.

5. Develop the collection through subscribed acquired electronic/printed resources and devices for direct and indirect access to CES as well as PhilRice branch stations.

6. Strengthen awareness of resources through promotion and user training.

7. Provide an online face-to-face communication between CES and BS officers and personnel.

8. Increase resource productivity using ICT.

ICT Security, Connectivity, Viability and Disaster Recovery for Resiliency

Highlights:
Network Administration
Maintained and monitored all corporate network facilities

- Backup Domain Controller (BDC) server setup and reconfiguration completed including the redundant integrated Domain Name Service (DNS), Dynamic Host Control Protocol (DHCP), and Domain Controller (DC).

- Installation and maintenance of campus-wide wireless local area network (WiFi system).

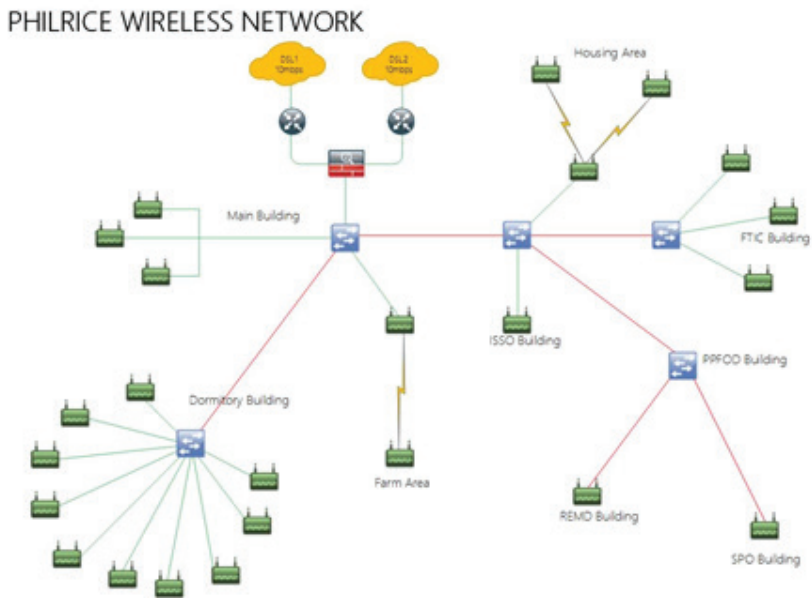

Figure 29. Flow chart showing PhilRice's wireless network

- Campus-wide wired local area network

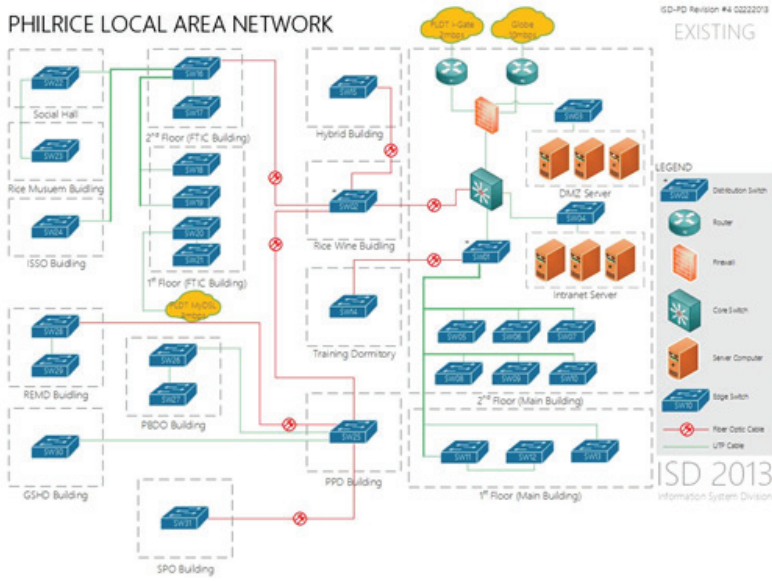

Figure 30. Flowchart showing PhilRice's LAN layout

- Connected one branch station with virtual private network (VPN) to localized access and facilitate off-site backup system

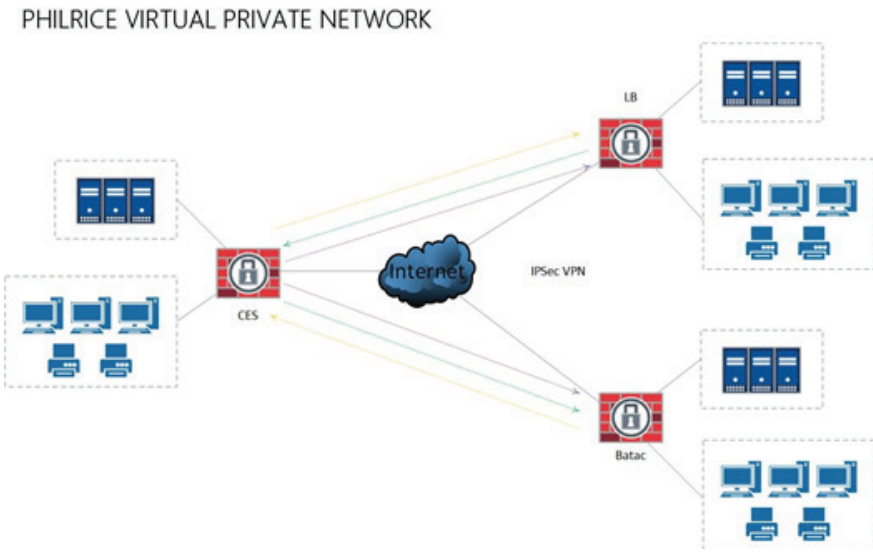

Figure 31. Flowchart showing PhilRice's virtual private network layout

System Administration

- Corporate Website (two servers)
- Corporate email (web-based, two servers)
  - 749 email accounts (220 permanent, 483 contracts)
  - 41 email groups
- PRAB Servers
  - Financial Management Information System (FMIS) – production server
  - Property and Supply Inventory System (PSIS) – production server
  - Human Resource Information System (HRIS) – development server
- ICTD-DevSvr, DBMP, PDC, Library, Farmers' Text Center, e-store,
- Private Business exchange (PBX) – telephone system

- Maintains and configures 1round 500 client computers for both wired and wireless LAN
- Orientation of staff on the use of the new Webmail and other ICT services
- Review of guidelines for e-payment system (JDAO No. 10-01)

ICT Security management

- Draft Disaster Recovery Plan and Business Continuity Plan
- Firewall Appliance
  - Daily maintenance and monitoring of firewall appliance
  - Pro-active intrusion detection and prevention

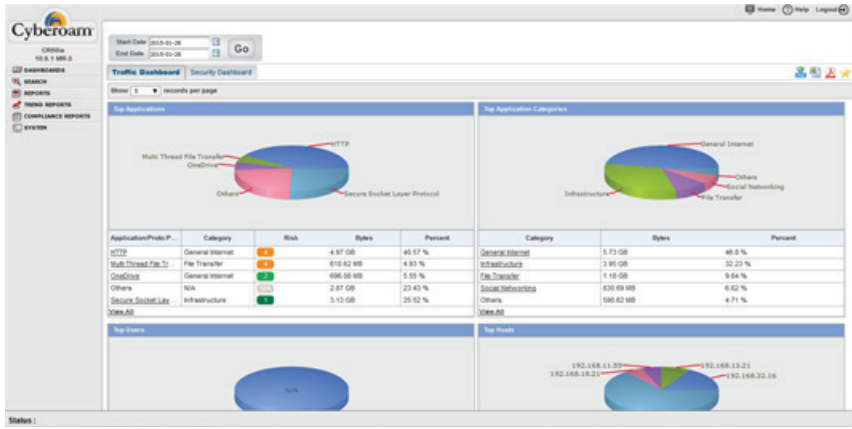

Figure 32. Traffic and Security Monitoring

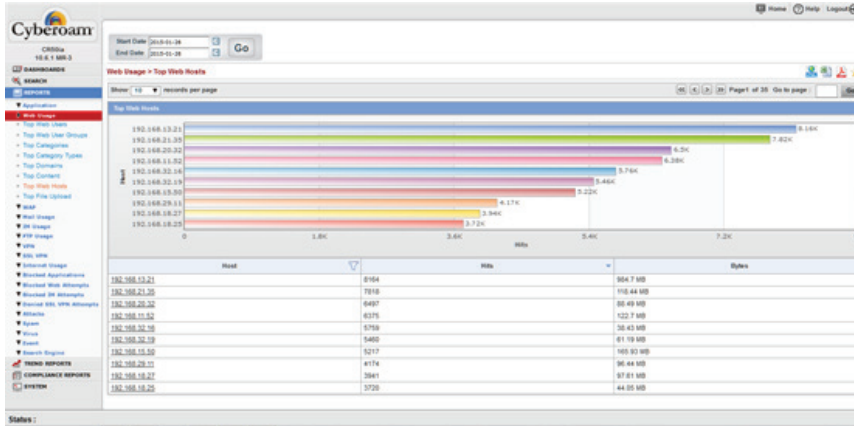

Figure 33. Web usage monitoring

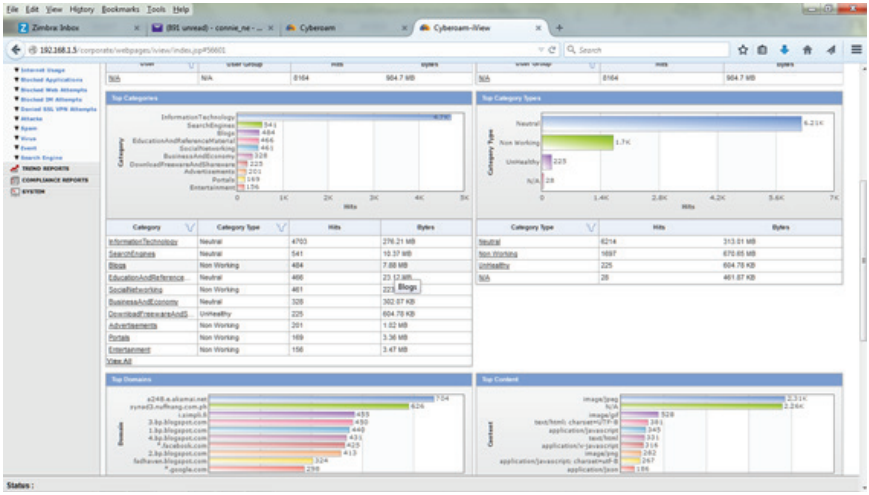

Figure 34. Per computer web usage monitoring

- Licensed subscription for the following firewall module:
  - Web and Application Filtering
  - Gateway Anti- Virus and Gateway Anti- Spam
  - Intrusion Prevention System

- Installation and configuration of firewall appliance in Los Baños, Midsayap and Batac stations

- Corporate anti-virus
  - Yearly renewal of subscription
  - Installation to new computers
  - Download of signatures updates and automatically update client's computer

- Negotiation of free SSL Certificate with DOST-ICTO for e-Store (PhilRice Shop) and Corporate Website

ICT Facilities Infrastructure

Highlights:

- Monitored, configured and client managed client users and Service providers (DSL1 FTIC DSL2 Lab Bldg, iGate Globe line)
  - DSL – WiFi connections
  - MAC address filtering for user access
  - Guarding against hackers, viruses and illegal activities

- Managed bandwidth - RDOC members were directed to the iGate for load balancing
- Tested and configured VPN connectivity between CES and LB
- Monitored user bandwidth usage and act accordingly based on results

- Completed cabling – LAN and telephone system New SPO Office and Warehouse

- New fiber optic cable from RW to PPD and SPO

- Connected ISSO to RW via Cat 5e STP cable

- Replaced old UPS of distribution switches

- Continuing troubleshooting and repair of ICT equipment

- Conduct of annual preventive maintenance of ICT equipment (CES and branch stations)
  - 400 computers are maintained pro-actively.

- Repair or replacement of ageing cables (LAN and telephone)

- Proposed design and material requirement submitted (CCC, Records, ODEDR)

- Conducted maintenance operation during the FMIS installation

- Client computer troubleshooting and maintenance
  - Software – 227
  - Hardware - 335
  - Network - 70
  - Printer – 95

- Telephone system maintenance and troubleshooting
  - 71 repaired
  - 37 transferred
  - 6 installed (new)
  - 23 party line (extension) installed

- Computer inventory (CES)
  - 389 desktop
  - 79 laptop/netbook/notebook

Library Management

Highlights:

A. Collection Development

The Library acquired 7993 (133%) of its target of 6,000 units of library materials composed of 321 books, 298 ebooks, 539 journals, 85 reprints/pamphlets, 4920 digital files, outsourced resources, CDs, and 1730 newspapers. It also subscribed to the online database Proquest Agriculture. Evaluation of seven (7) additional databases and 151 materials was done and being processed for acquisition to provide more knowledge materials and enhance the research capacity of the library. These are funded by several projects from the DA FSSP Program. It's Kindle and Kobo ebook readers are loaded with 300 titles.

We have 3 local journal subscriptions and 5 newspaper dailies.

Requested materials not available in Proquest or Science Direct were requested from UP Diliman, IRRI, and from authors totaled 97 articles.

B. Circulation

Usage increased slightly (4037) for circulated materials achieving the 100% target (4000), database usage of Proquest Agriculture was at 108%. Wifi is also available at the Library for registered users and devices. The IRRI Kiosk was also installed to search available IRRI resources. Seven seminars were conducted as capacity building to make staff productive users of IT at CES and 6 branch stations on the use of the OPAC , online resources, open access journals, trends, predatory open access, incoming additional resources and databases like Science Direct, Springer, Proquest Sociology, EBSCO Food Science, Endnote, AACC Approved Methods, Green R, Expanded Academic, Gale Science in Context, Powerpack Agriculture Collection, Philippine e-journals and the Infolib system. The Infolib system was installed in 6 stations for use in a small library with its cataloguing and circulation modules. Other topics are the PhilRice Information system policies, operation and use of network attached storage system, HRIS, FMIS, PRAB, network security, cyber ethics, database management, corporate email, DBMP, Excel, and

computer and network trouble shooting and maintenance. Favorable response rating of excellent and very good were given. The topics were found very useful.

C. Organization of library materials and database management

Catalogued publications total to 397 comprising of 181 books originally catalogued, 64 were re-catalogued, 95 reprints and 24 journal titles and 33 special materials.

Our total barcoded publications entered in the Destiny software is: 6726 volumes (5436 titles). Destiny software was upgraded to 12 version.

D. Current Awareness Service

Daily News Monitor was sent to top management. Links to the news articles were included to easily access the items. These news items were also posted in the Library Bulletin Board.

We collected and posted 66 PhilRice articles, 2069 rice articles, and circulated 26 content pages with rice articles via email.

E. Library Web

Improvement of the library web page is undertaken continuously. Several additions to the original one are being done to upgrade and further improve it. Available e-files of scientific publications authored by PhilRice staff were included

H. Proquest Usage and Literature search

There were 2845 recorded searches with 4750 downloaded citations/ abstracts and full-text articles.

Average unique searches is 154 per month, while average monthly download is 396 articles.

Recorded searches in OPAC within the Library is 181 with the increase of web accessed search by the staff.

I. Indexed Articles

A total of 863 articles were indexed and converted to Excel files for inclusion to XCardbox database. Conversion of the files from the old Cardbox were finished and ready to be uploaded to the new database. A total of 1199 articles were

already uploaded.

J. IPaD

Conducted and presented results of needs assessment survey for IPaD

Project Re-engineering and Automating the Bureaucracy (PRAB)

Financial Management Information System (FMIS) Enhancement

- Completed the following target tasks/activities in the FMIS.
  - Production servers backup guidelines in CES & BSs - 100% running backup routine according to applicable schedule to four locations in CES and two locations in BSs
  - Troubleshoot errors PRAB Systems and servers in CES and BSs
  - Maintain and monitor systems and servers and Assist user concerns in CES and BSs
  - Acceptance of FMIS 2014 which include BDD and trust accounts
  - Beta testing of Petty Cash and SOIS/POIS
  - Roll out of FMIS to all branches

- Completed the following target tasks/activities in the PSIS.
  - Improvement of the PSIS
  - Development of the procurement system

- Human Resource Information System
  - System Analysis and Design was done
  - 90% System analysis and design for HRIS
  - Leave application preparation module in A2S2
  - Travel order request preparation module in A2S2

Division Based Activities

- Conducted IT Productivity Seminars/Roadshow at CES and branch stations entitled “Gusto Namin Productive IS Kayo!”. It aims to educate and train the IT users to become more productive using PhilRice ICT resources.

Topics:

1. PhilRice Information System Policies, Operation and Use of Network Attached Storage
2. HRIS, FMIS, Supply and Property IS
3. Network Security and Corporate Email
4. Database Management

5. Cyber Ethics, PDTS, DBMP
6. Library OPAC, Online Resources, Emerging trends, Open Access, Infolib System
7. Computer and Network Troubleshooting and Maintenance
8. Microsoft Excel

Table 2. Location and number of IT roadshow participants

Station	Number of Participants	Date
CES	35	May 28, 2014
Batac	30	Oct. 8-10, 2014
Bicol	11	Oct. 14-16, 2014
Isabela	23	Oct. 22-24, 2014
Agusan	32	Nov. 19-21, 2014
Los Baños	29	Nov. 25-26, 2014
Negros	15	Dec. 10-12, 2014

- Corporate webmail training/seminar
  - Policy
  - Basic functions

- Organized and conducted the AgriHackathon, a competition to develop innovative and cutting edge technologies tailored for agriculture using web and/or mobile applications. It was participated by 12 groups from public, private schools and IT developers in the province. Some of the sponsors were Microsoft, Freelancer and Eqela. The prototype of the winner app is currently enhanced and tested for field environment.

Special Project

Philippine Rice Information System (PRISM)

The Philippine Rice Information System (PRISM) project develops an online information system that aids decision making related to food security, such as identifying appropriate interventions to address rice yield gaps, and rapid response to emergency situations. This project will collate new and existing information and research tools that will map and monitor rice growing areas. It will generate detailed season data on rice yields; flood, drought-affected, and wind-damaged rice areas; farmers' agronomic practices; farm inputs used; and pest and disease incidence and outbreaks in the Philippines.

The project is a collaboration among the International Rice Research Institute (IRRI), Philippine Rice Research Institute (PhilRice), the Department of Agriculture (DA) National Rice Program, sarmap (a remote sensing technology provider based in Switzerland and long term partner of IRRI and PhilRice), the Bureau of Agricultural Research (BAR), DA-Field Programs Operational Planning Division (FPOPD), DA-Regional Field Offices (RFOs), Philippine Statistical Authority- Bureau of Agricultural Statistics (PSA-BAS), Bureau of Plant Industry (BPI), Bureau of Soils and Water Management (BSWM), and the Local Government Units (LGUs). This project will leverage data, information and knowledge from the recently concluded Rice Self-Sufficiency Program, 2009 to 2012 (RSSP), Irrigated Rice Research Consortium (IRRC) and the ongoing IRRI project, Remote Sensing-based Information and Insurance for Crops in Emerging Economies (RIICE)

Budget support for PhilRice and IRRI started in 2013. The initial funds supported the inception phase, with activities such as consultation meetings, partnership building, development of protocols and knowledge resources, provision of technical training to the field staff in the regions and municipalities, and overall project coordination.

The PRISM project contributed to the assessment of the damage to rice crops caused by typhoon Yolanda (Haiyan) in Leyte. The assessment was done using satellite imagery and ground data from the RIICE project. The assessment showed that around 32,500ha were cultivated in the monitored area during the 2013 wet season. When Yolanda hit the province of Leyte; most of the rice was already harvested and only 1,790ha of rice area were flooded. Figure 36 shows rice areas and those flooded as detected by synthetic aperture radar (SAR) satellite images over Leyte after the typhoon.

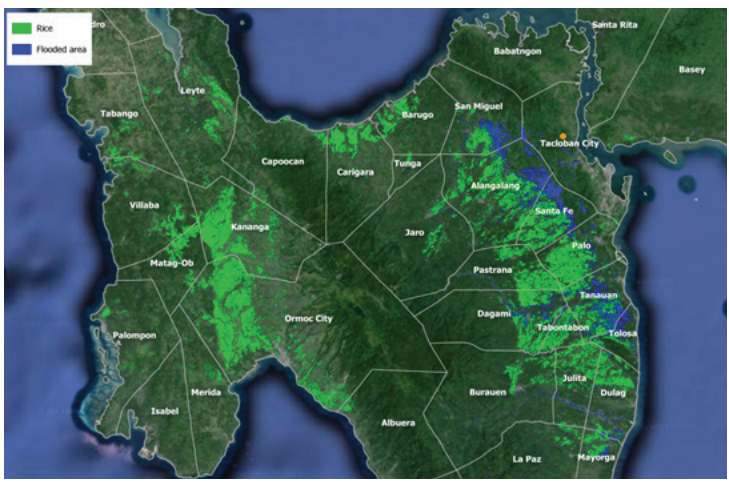

Figure 35. Processed SAR satellite images showing the Leyte province after typhoon Yolanda

In 2014, IRRI and PhilRice will receive an annual budget amounting to Php 25.13M and Php 23.65M, respectively. Seven regions, (CAR, III, IVB, V, VI, VII, and VIII) have started PRISM-related activities. The 7 regions contributed funds amounting to Php 18.97M in 2013. Region V contributed Php 4M in 2014 for the 'wall-to-wall' coverage of SAR images throughout the wet season. The following activities are being conducted with the regions in 2014: Training of Trainers for Components A and B; purchase and processing of satellite imagery; purchase and delivery of standard equipment for field validation and monitoring; and fieldwork activities starting this wet season to generate data support for the PRISM products. A web interface is being developed to provide immediate results to target end-users. A refined disaster assessment monitoring protocol is also expected at the end of the year. Nonetheless, damages to rice areas caused by Typhoon Glenda and Typhoon Mario in Region V and VIII and Region III, respectively is being assessed using satellite imagery and ground observations. In Nueva Ecija, the total flooded rice areas during Typhoon Mario (Figure 37) are estimated at 2,297ha. Of the flooded rice areas, 78% are in the reproductive growth stage and 22% are in the ripening stage.

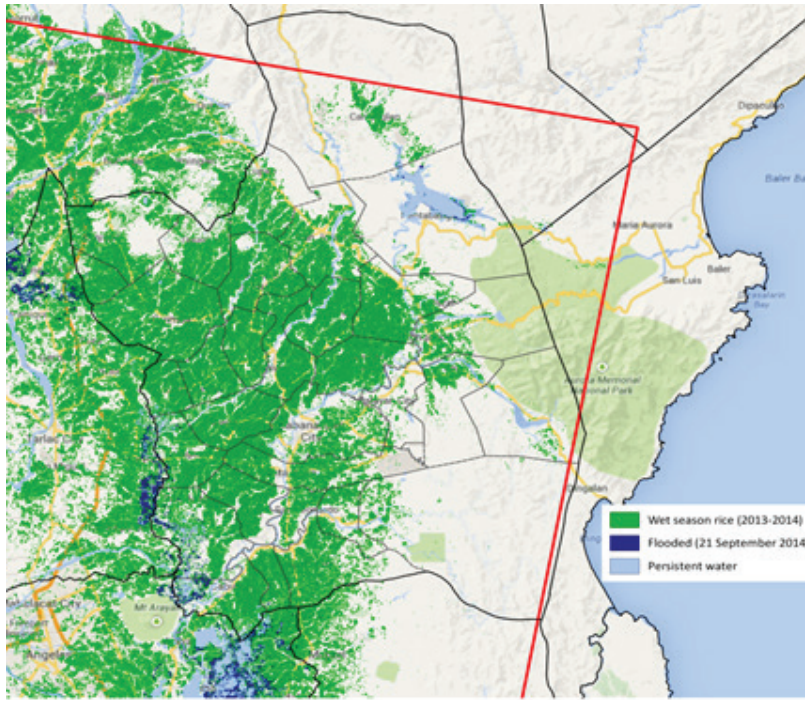

Figure 36. Wet season rice and flooded areas on September 21, 2014 from satellite imagery in Nueva Ecija. The red lines show the coverage (footprint) of the satellite images used to assess flooded areas.

In 2015, the remaining DA regional field offices will join in the PRISM together with the first seven regions, which have already started their activities. This will widen the scope of the implementation of the project, and thus would require continuous support from the Department of Agriculture.

Sustainability and Institutionalization of PRISM

PRISM is envisioned to continue beyond its project life of four years. For this to be sustainable, PRISM must be institutionalized within DA. By the end of 2017, IRRI will hand over to DA and/or identified agencies a turnkey package that includes all training materials, protocols and the PRISM online system. The identified 'caretaker' of the established system will be responsible for its management, operations, and maintenance. Currently PhilRice by virtue of its mandate and involvement is identified as the leading potential agency that may continue PRISM operation and management.

A PRISM Advisory Board composed of DA, PhilRice, and PSA-BAS will be formed to ensure that these interested agencies are regularly updated of the project activities and outputs. In this capacity they can participate in decisions pertinent to the project implementation. The Advisory Board will be consulted regarding specific recommended roles to be agreed upon. The recommended roles of each agency in the long-term maintenance of PRISM will be revisited every year as needed during the course of the project.

Remote Sensing Based Information and Insurance for Crops in Emerging Economies

Highlights:

- Conducted monitoring, metadata collection, leaf area index measurement, crop-cut collection and rice and non-rice validation of RIICE sites in the Philippines for 2014 dry and wet season. The RIICE sites are located in Nueva Ecija (Central Luzon), Leyte West (Eastern Visayas), Leyte East (Eastern Visayas) and Agusan del Norte (Mindanao).

- Conducted damage assessment and submitted validated damaged report during Typhoon Mario, Glenda and Ruby.

- Submitted crop management data including metadata, leaf area index, yield and validation data of RIICE sites for 2014 dry and wet season in digital formats suitable for analysis by IRRI team (Table 3).

-

Table 3. Summary of data collected in RIICE sites for 2014 dry season.

Site Name	Number of Locations	Metadata	Monitoring	LAI	CCE	RNR
2014 Dry Season						
Leyte East	20	complete	complete	complete	complete	complete
Leyte West	20	complete	complete	complete	no sample in 1 field*	complete
Agusan del Norte	19	complete	1 missed satellite pass	complete	no sample in 1 field**	complete
Nueva Ecija	20	complete	complete	complete	complete	complete
2014 Wet Season						
Leyte East	20	complete	complete	complete	complete	99 points
Leyte West	20	complete	complete	complete	complete	complete
Agusan del Norte	19	complete	complete	2 sampling missed***	no sample in 2 fields**	99 points
Nueva Ecija	20	complete	complete	complete	no sample in 2 fields**	complete

* damaged by stem borer
** missed CCE
*** ceptometer failed to record LAI

- Provided local knowledge and expertise in Leyte, Agusan del Norte and Nueva Ecija for smooth implementation of the project.

- Presented the PhilRice country report during the RIICE workshop at IRRI on March 24 to26, 2014.

- Presented and won the best paper at downstream category during 44th CSSO Scientific Conference at Cebu Parklane International Hotel on May 12 to16, 2014. The citation is as follow:

  Mabalay, M.O., A Nelson, T Setiyono EP Quilang, A Maunahan, P Abonete, A Rala, J Raviz, R Skorzus, J Loro, F Holecz, M Barbieri, F Collivignarelli and S Monaco. Rice area mapping and yield estimation for crop insurance in Leyte. Best Paper Downstream Category at 44th CSSO Scientific Conference. Cebu Parklane International Hotel. May 12 to16, 2014.

Abbreviations and acronymns

ABA – Abscicic acid
Ac – anther culture
AC – amylose content
AESA – Agro-ecosystems Analysis
AEW – agricultural extension workers
AG – anaerobic germination
AIS – Agricultural Information System
ANOVA – analysis of variance
AON – advance observation nursery
AT – agricultural technologist
AYT – advanced yield trial
BCA – biological control agent
BLB – bacterial leaf blight
BLS – bacterial leaf streak
BPH – brown planthopper
Bo - boron
BR – brown rice
BSWM – Bureau of Soils and Water Management
Ca - Calcium
CARP – Comprehensive Agrarian Reform Program
cav – cavan, usually 50 kg
CBFM – community-based forestry management
CLSU – Central Luzon State University
cm – centimeter
CMS – cystoplasmic male sterile
CP – protein content
CRH – carbonized rice hull
CTRHC – continuous-type rice hull carbonizer
CT – conventional tillage
Cu – copper
DA – Department of Agriculture
DA-RFU – Department of Agriculture-Regional Field Units
DAE – days after emergence
DAS – days after seeding
DAT – days after transplanting
DBMS – database management system
DDTK – disease diagnostic tool kit
DENR – Department of Environment and Natural Resources
DH L– double haploid lines
DRR – drought recovery rate
DS – dry season
DSA - diversity and stress adaptation
DSR – direct seeded rice
DUST – distinctness, uniformity and stability trial
DWSR – direct wet-seeded rice
EGS – early generation screening
EH – early heading
EMBI – effective microorganism-based inoculant
EPI – early panicle initiation
ET – early tillering
FAO – Food and Agriculture Organization
Fe – Iron
FFA – free fatty acid
FFP – farmer's fertilizer practice
FFS – farmers' field school
FGD – focus group discussion
FI – farmer innovator
FSSP – Food Staples Self-sufficiency Plan
g – gram
GAS – golden apple snail
GC – gel consistency
GIS – geographic information system
GHG – greenhouse gas
GLH – green leafhopper
GPS – global positioning system
GQ – grain quality
GUI – graphical user interface
GWS – genomwide selection
GYT – general yield trial
h – hour
ha – hectare
HIP - high inorganic phosphate
HPL – hybrid parental line
I - intermediate
ICIS – International Crop Information System
ICT – information and communication technology
IMO – indigenous microorganism
IF – inorganic fertilizer
INGER - International Network for Genetic Evaluation of Rice
IP – insect pest
IPDTK – insect pest diagnostic tool kit
IPM – Integrated Pest Management
IRRI – International Rice Research Institute
IVC – in vitro culture
IVM – in vitro mutagenesis
IWM – integrated weed management
JICA – Japan International Cooperation Agency
K – potassium
kg – kilogram
KP – knowledge product
KSL – knowledge sharing and learning
LCC – leaf color chart
LDIS – low-cost drip irrigation system
LeD – leaf drying
LeR – leaf rolling
lpa – low phytic acid
LGU – local government unit

LSTD – location specific technology development
m – meter
MAS – marker-assisted selection
MAT – Multi-Adaption Trial
MC – moisture content
MDDST – modified dry direct seeding technique
MET – multi-environment trial
MFE – male fertile environment
MLM – mixed-effects linear model
Mg – magnesium
Mn – Manganese
MDDST – Modified Dry Direct Seeding Technique
MOET – minus one element technique
MR – moderately resistant
MRT – Mobile Rice TeknoKlinik
MSE – male-sterile environment
MT – minimum tillage
$mtha^{-1}$ - metric ton per hectare
MYT – multi-location yield trials
N – nitrogen
NAFC – National Agricultural and Fishery Council
NBS – narrow brown spot
NCT – National Cooperative Testing
NFA – National Food Authority
NGO – non-government organization
NE – natural enemies
NIL – near isogenic line
NM – Nutrient Manager
NOPT – Nutrient Omission Plot Technique
NR – new reagent
NSIC – National Seed Industry Council
NSQCS – National Seed Quality Control Services
OF – organic fertilizer
OFT – on-farm trial
OM – organic matter
ON – observational nursery
OPAg – Office of Provincial Agriculturist
OpAPA – Open Academy for Philippine Agriculture
P – phosphorus
PA – phytic acid
PCR – Polymerase chain reaction
PDW – plant dry weight
PF – participating farmer
PFS – PalayCheck field school
PhilRice – Philippine Rice Research Institute
PhilSCAT – Philippine-Sino Center for Agricultural Technology
PHilMech – Philippine Center for Postharvest Development and Mechanization
PCA – principal component analysis
PI – panicle initiation
PN – pedigree nursery
PRKB – Pinoy Rice Knowledge Bank
PTD – participatory technology development
PYT – preliminary yield trial
QTL – quantitative trait loci
R - resistant
RBB – rice black bug
RCBD – randomized complete block design
RDI – regulated deficit irrigation
RF – rainfed
RP – resource person
RPM – revolution per minute
RQCS – Rice Quality Classification Software
RS4D – Rice Science for Development
RSO – rice sufficiency officer
RFL – Rainfed lowland
RTV – rice tungro virus
RTWG – Rice Technical Working Group
S – sulfur
SACLOB – Sealed Storage Enclosure for Rice Seeds
SALT – Sloping Agricultural Land Technology
SB – sheath blight
SFR – small farm reservoir
SME – small-medium enterprise
SMS – short message service
SN – source nursery
SSNM – site-specific nutrient management
SSR – simple sequence repeat
STK – soil test kit
STR – sequence tandem repeat
SV – seedling vigor
t – ton
TCN – testcross nursery
TCP – technical cooperation project
TGMS – thermo-sensitive genetic male sterile
TN – testcross nursery
TOT – training of trainers
TPR – transplanted rice
TRV – traditional variety
TSS – total soluble solid
UEM – ultra-early maturing
UPLB – University of the Philippines Los Baños
VSU – Visayas State University
WBPH – white-backed planthopper
WEPP – water erosion prediction project
WHC – water holding capacity
WHO – World Health Organization
WS – wet season
WT – weed tolerance
YA – yield advantage
Zn – zinc
ZT – zero tillage

List of Tables

List of Figures

List of Figures

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