Workshop on Information and Communications Management for Agricultural Innovation in Southeast Asia

(27-29 September, 2011)
Asian Institute of Technology, Bangkok, Thailand

PROCEEDINGS

APAARI

GFAR

FAO
FIAT PANIS

ASIAN INSTITUTE OF TECHNOLOGY 1959
AIT
Asian Institute of Technology

Workshop on
Information and Communications Management for Agricultural Innovation in Southeast Asia

(27-29 September, 2011)

Asian Institute of Technology, Bangkok, Thailand

PROCEEDINGS

Organized by

Asia-Pacific Association of Agricultural Research Institutions (APAARI)
Global Forum on Agricultural Research (GFAR)
Food and Agriculture Organization of the United Nations (FAO)
Asian Institute of Technology (AIT)

Workshop on Information and Communications Management for Agricultural Innovation in Southeast Asia: Proceedings

Prepared by:

Dr. S. Attaluri
Coordinator, Asia-Pacific Agricultural Research Information System (APARIS)
Asia-Pacific Association of Agricultural Research Institutions (APAARI)
C/o FAO Regional Office for Asia and the Pacific (FAO RAP)
Maliwan Mansion, 39 Phra Atit Road
Bangkok 10200, Thailand

March 2012

CONTENTS

Foreword

Countries in the Southeast Asia now faces new challenges of further making agriculture and farming more market oriented and integrated in their economies. The region's agriculture is increasingly also becoming export oriented. One of the key criteria for progress and innovation is of "openness" in sharing information and skills. This openness in sharing information is also necessary for rapid innovation in market and export oriented agriculture. The current use of Social Media and what are called Web 2.0 and Web 3.0 tools offer significant potential in bringing greater openness in sharing, exchanging and effectively using information for agricultural innovation. The region has benefitted from significant changes in its Information and Communications Technology revolution with Internet access and Mobile Telephony use now almost ubiquitous even in rural agricultural communities.

APAARI has been promoting the use of Information and Communication Management (ICM) in AR4D through its program Asia-Pacific Agricultural Research Information System (APARIS) by strengthening National Information Nodal Points (NINPs) of National Agricultural Research Systems (NARS) in the Asia-Pacific region. APARIS functions as a regional platform for sharing agricultural research information and establishes linkages with other regional and global agricultural networks. In ordet to promote use of ICT/ICM in agricultural research and innovation systems, it undertakes advocacy, capacity development programs and dissemination of success stories in collaboration with regional and international partners.

As part of Bridging Knowledge Gap activities under the GCARD Roadmap implementation, APAARI organized workshops for South Asia, Southeast Asia and the Pacific regions, in close collaboration and support of GFAR and FAO, with an objective to strengthen NARS and improve capacities and skills of personnel to promote greater sharing of knowledge for outscalling of agricultural innovations at the regional level and contributing to CIARD initiative in the region. The Coherence in Information for Agricultural Research for Development (CIARD) is a multi-stakeholder global initiative, lead by GFAR and FAO, working to make agricultural research information publicly available and more accessible.

Realizing the importance of strengthening agricultural information systems in the Southeast Asian region, a three-day "Workshop on Information and Communications Management for Agricultural Innovation in Southeast Asia" was jointly organized by APAARI, FAO, GFAR and Asian Institute of Technology (AIT) on 27-29 September, 2011 at AIT Campus, Bangkok, Thailand. The objectives of the workshop were to: consider new dimensions in ICM for contributing to rapid agricultural innovation for market and export oriented agriculture that is fast emerging in Southeast Asia; take stock of the current status of ICM in national systems of agricultural research and innovation and identify what technological, institutional and community participation related gaps that need to be filled for improving availability, accessibility, applicability and effective use of information for agricultural innovation; and promote greater involvement and participation of National Systems and Organizations in the CIARD movement.

Eighteen senior information and communication managers of national agricultural research systems of Cambodia, Indonesia, Japan, Lao PDR, Malaysia, Myanmar, Philippines, Thailand and Vietnam; three information experts from CG Centers viz. Center for International Forestry Research (CIFOR), International Rice Research Institute (IRRI) and WorldFish and a representative of Central Asia and the Caucasus Association of Agricultural Research Institutions (CACAARI) besides 12 resource persons from APAARI, ACIAR, GFAR, FAO RAP, AIT and Kasetsart University attended the workshop.

Nine country reports, experiences from CG Centers and CACAARI were presented on ICT/ICM use and applications that promote agricultural innovations followed by open discussions after each presentation. The country presentations revealed that there has been significant progress reported in the use and application of ICT/ICM for AR4D at national level. The workshop suggested useful recommendations to address Technological Issues, Institutional Issues and Community Participation in use and application of ICM for agricultural innovation. Use of mobile technologies, development of farmers' leaders, building capacity of farmers to use ICTs and information, catalyzing policies through success stories and linking farmers' organizations to markets through use of ICT/ICM initiatives are some of the important steps to be considered for improving ICM for agricultural innovations.

The proceedings synthesize workshop deliberations, outcome of group works and recommendations for strengthening agricultural information systems in the Southeast Asian countries and improving their participation in CIARD initiative for effective sharing of information and knowledge at national, regional and global levels. I am sure that these proceedings would be useful to all ARD stakeholders engaged in promoting ICT/ICM for AR4D in the Asia-Pacific region and elsewhere.

(Dr. Raj Paroda)
Executive Secretary
APAARI

Abbreviations

ACIAR	Australian Centre for International Agricultural Research
AIMS	Agricultural Information Management Standards
AIT	Asian Institute of Technology
APAARI	Asia-Pacific Association of Agricultural Research Institutions
APARIS	Asia-Pacific Agricultural Research Information System
AR4D	Agricultural Research for Development
CACAARI	Central Asia and the Caucasus Association of Agricultural Research Institutions
CAMIS	Cambodia Agricultural Market Information System
CARDI	Cambodian Agricultural Research and Development Institute
CARDIG	Cambodian Agricultural and Rural Development Information Gateway
CGIAR	Consultative Group on International Agricultural Research
CIARD	Coherence in Information for Agricultural Research for Development
CIARD RING	CIARD Routemap to Information Nodes and Gateways
CIFOR	Center for International Forestry Research
CLICK	Coalition for Lao Information, Communication and Knowledge (Loa PDR)
EMIS	Electronic Marketing Information System
FAO	Food and Agriculture Organization of the United Nations
FAO RAP	Food and Agriculture Organization, Regional Office for Asia and the Pacific
GCARD	Global Consultation on Agricultural Research for Development
GFAR	Global Forum on Agricultural Research
GIS	Geographic Information System
GRiSP	Global Rice Science Partnership
IAARD	Indonesian Agency for Agricultural Research and Development
ICM	Information and Communication Management
ICT/ICM	Information and Communication Technology/Information and Communication Management
IRRI	International Rice Research Institute
ITU	International Telecommunication Union
IVR	Interactive Voice Response
JIRCAS	Japan International Research Center for Agricultural Sciences
MARDI	Malaysian Agricultural Research and Development Institute
NAFES	National Agriculture and Forestry Extension Service (Loa PDR)
NAFRI	National Agriculture and Forestry Research Institute (Loa PDR)

NAIS	National Agricultural Information Systems
NARS	National Agricultural Research Systems
NINPs	National Information Nodal Points
PARC	Pakistan Agricultural Research Council
PCAARRD	Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development
RAIS	Regional Agricultural Information Systems
RFID	Radio Frequency Identification
RSS	Really Simple Syndication
VAAS	Vietnam Academy of Agricultural Sciences

Workshop on
Information and Communications Management for
Agricultural Innovation in Southeast Asia

Introduction

Agriculture in Southeast Asia now faces new challenges. After achieving significant progress in improving agricultural productivity, the region's countries now have the challenge of further making agriculture and farming more market oriented and integrated in their economies. The region's agriculture is increasingly also becoming export oriented. Because of these trends, rapid agricultural innovation becomes not only essential but also critical for further growth and development. The region has benefitted from significant changes in its information and communications technology revolution with Internet access and Mobile Telephony use now almost ubiquitous even in rural agricultural communities. It is now time to take stock of how improved information and communications management in national agricultural research and innovation systems, the main generators of organized, structured agricultural information, are making use of these ICTs and contributing to agricultural innovation within their own countries as also in the region and elsewhere.

Fortunately, in the Asia-Pacific region, there is increasing recognition by governments to the importance of the use of information communication technologies or ICTs in agriculture which is very encouraging. This is important as access to information and knowledge and having the right information at the right time can make a difference to farmers and rural communities be it for technical production, marketing, or post-harvest information or as warning against potential diseases and weather related concerns along with relevant actions to take to name but a few. One of the key criteria for progress and innovation is "openness" in sharing information and skills. This openness in sharing information is also necessary for rapid innovation in market and export oriented agriculture. The use of current ICT tools Social Media and Web 2.0 technologies offer significant potential in bringing greater openness in sharing, networking all actors across the value chain, exchanging and effectively using information for agricultural innovation. Initiatives such as the Coherence in Information for Agricultural Research for Development (CIARD) from FAO and other international partners are a step in the right direction in making agricultural research information truly available and accessible to all.

In order to take stock of how ICM help foster agricultural innovation systems in the Southeast Asian countries, a three-day "Workshop on Information and Communications Management for Agricultural Innovation in Southeast Asia" was organized jointly by APAARI, FAO, GFAR and Asian Institute of Technology (AIT) on 27-29 September, 2011 at AIT Campus, Bangkok.

The objectives of the workshop were to: consider new dimensions in ICM for contributing to rapid agricultural innovation for market and export oriented agriculture that is fast emerging in Southeast Asia; take stock of the current status of ICM in national systems of agricultural research and innovation and identify what technological, institutional and community participation related gaps need to be filled for improving availability, access, applicability and effective use of information for agricultural innovation; and promote greater involvement and participation of National Systems and Organizations in the CIARD movement and identify how the CIARD movement can further the cause of make agricultural research information publicly available and accessible to all as also enabling effective use

Participants of the Workshop

of this information for agricultural innovation especially in the context of contributing to rapid agricultural innovation for an increasing market and export oriented agriculture. The concept note of the workshop is at Annexure-I.

A total of 41 participants attended the workshop which included 18 senior information and communication managers of national agricultural research systems of Cambodia, Indonesia, Japan, Lao PDR, Malaysia, Myanmar, Philippines, Thailand and Vietnam; 3 information experts from CG Centers viz. Center for International Forestry Research (CIFOR), International Rice Research Institute (IRRI), and WorldFish; a representative of CACAARI; and resource persons from APAARI, ACIAR, GFAR, FAO RAP, AIT and Kasetsart University. List of participants is at Annexure-II.

Inaugural Session

The workshop was inaugurated by the Chief Guest Mr. Hiroyuki Konuma, Assistant Director-General and FAO Regional Representative for Asia and the Pacific in a function chaired by Dr. Simon Hearn, Chairman, APARIS Steering Committee and Principal Adviser, ACIAR.

In the inaugural session, Dr. Raj Paroda, Executive Secretary, APAARI welcomed the participants and highlighted the efforts of APAARI in strengthening agricultural information and knowledge exchange in the region. He pointed out that ICTs should help empower small holder farmers.

Dr. Malcolm Hazelman, Senior Extension, Education and Communications Officer, FAO RAP emphasized need for knowledge sharing for inclusive growth. Dr. Ajit Maru, Senior Knowledge Officer, GFAR Secretariat flagged that access to information and its use would address new challenges in agriculture and it requires new skills for handling information management for AR4D.

The Guest of Honour Professor Said Irandoust, President, AIT in his address mentioned that ICTs offer immense opportunities that transform agricultural research, extension and innovations in markets and stressed need for pro-poor innovations and creation of enabling environment related to policies, systems and institutional change.

**Mr. Hiroyuki Konuma, Assistant Director-General and FAO Regional Representative
for Asia and the Pacific giving the inaugural address**

Mr. Hiroyuki Konuma in his inaugural address expressed concern about population explosion and food security. He pointed that farmer productivity is still constrained by gaps in information and skills in new technologies besides lack of access to technology, inputs, services and credit etc. He said that after achieving significant progress in improving agricultural productivity, the Southeast Asian countries now have the challenge of further making agriculture and farming more market oriented and integrated in their economies. Because of these trends, rapid agricultural innovation becomes not only essential but also critical for further growth and development. He emphasized that ICTs help foster agricultural innovation systems in the Southeast Asian countries by improving access to information and knowledge and bringing openness in sharing information which is essential for rapid innovation in market and export oriented agriculture. He urged that new ICT tools such as Social Media and Web 2.0 technologies should be harnessed for more openness in sharing, networking all actors across the value chains.

Dr. Simon Hearn in his concluding remarks opined that ICTs bring challenges as well opportunities for agricultural development. He stated that the role and relevance of traditional communication methods for strengthening research and extension systems is important in securing access to information and knowledge. Mr. Gerard Sylvester, Knowledge & Information Management Officer, FAO RAP shared that right information to right users at the right time help improve right impact of agricultural research. Dr. S. Attaluri, APARIS Coordinator proposed vote of thanks.

Technical Sessions

The program was organised in six technical sessions on important topics related to the workshop themes. Program is at Annexure-III.

Session 1:   New Dimensions in ICM for Agricultural Innovations

Chair: *Dr. Raj Paroda, APAARI*
Co-Chair: *Dr. Md. Zakir Hossain, Sr. Program Specialist and Head, Agriculture, Resources
                  and Environment (ARS), AIT Extension, AIT*

1.   Role of APARIS in Regional Agricultural Information Exchange for Agricultural Innovation

Dr. S. Attaluri, Coordinator, APARIS

The presentation shared the role of APARIS program and its activities since its inception in pormoting agricultural information exchange in the region. It described the focus areas of APARIS viz., capacity development of National Information Nodal Points (NINPs), transfer of agricultural innovations through success stories, advocacy of ICT/ICM highlighting the results of status report on ICT/ICM in AR4D, implementation of communication strategy, Bridging Knowledge Gaps activities under the implementation of GCARD Roadmap in the region along with provision of information platforms created on the APAARI website.

2.   Information on Impact of Australian Research Partnership

Dr. Simon Hearn, Principal Adviser, Australian Centre for International Agricultural Research (ACIAR)

Food security crises and price volatility have placed agriculture and food value chains back on the development agenda. It is noted that agricultural development assistance comprises 7% of total aid (in Australia) but is likely to increase further. The presentation described the role of ACIAR in developing countries, and administering the Australian contribution to CGIAR and explained the position of ACIAR in the foreign aid and innovation system. It highlighted the ACIAR's impact assessments, results, examples of successful partnerships, benefits to Australian agriculture, lessons learnt from ACIAR impact assessments and future impact assessment challenges.

3.   New Challenges for Agricultural Innovation in Southeast Asia – How ICM contributes to solving them

Dr. Ajit Maru, Senior Knowledge Officer, GFAR Secretariat

Market chains for food items span several countries and are becoming complex. Food and bio-safety increasingly becoming rigorous forcing producers to ensure traceability and appropriate labeling in the Southeast Asia. In addition post "Green Revolution" agriculture in Southeast Asia now directed towards improved farm productivity and profit through market participation. The presentation described the trends in agricultural research for development and noted that sustainable livelihoods of agricultural communities increasingly depending on availability and access to information and new knowledge. It elaborated the agricultural innovation system and new information flows, framework for ICT for AR4D, changes in ARD information models, status of ICM for AR4D in Asia and role of GFAR in improving ICM for ARD.

4.   Agricultural Innovation Systems in the Asia-Pacific region – How ICM help resource poor farmers

Dr. Malcolm Hazelman, Senior Extension, Education and Communications Officer, FAO Regional Office for Asia and the Pacific

ICM has a role in addressing the priorities of the region but requires special attention to that of resource poor farmers. The presentation clarified the definitions of systems, innovation, innovation system, agricultural knowledge and innovation system and Information and Communications Management (ICM). It pointed that needs of the resource-poor smallholders not well addressed by the AR4D agenda in the past. Underinvestment in Agriculture & AR4D, particularly in horticulture, livestock and fisheries, rainfed areas, socio-economic and NRM research, maintenance research and

human capital formation, is an important reason for this. The AR4D priorities of South Asia, Southeast Asia and the Pacific regions were highlighted and opined that ICT/ICM has great role to play.

Session 2: ICM for Innovation through the Consortium Research Projects and Regional Fora

Chair: *Dr. Simon Hear n, ACIAR*
Co-c hair: *Ms. Rosna Amir, MARDI*

5.   Experience of CACAARI

Dr. Oleg Shatberashvili, Consultant, CACAARI

Frequent organizational transformations in ARD systems and underinvestment in agricultural research are some of the barriers for ICT use in AR4D in the Central Asia and Caucasus region. The presentation referred the latest statistics of ICTs (cellular phones, Internet, computers, hosting locations, and use of social networks) and ITU's ICT Development Index (IDI) pertaining to the countries in the region. It noted that Armenia, Azerbaijan and Kazakhstan have good Internet connectivity on par with the world average. Georgia has more facebook users, and in other CAC region Russian networks are more popular. It presented the CACAARI's Regional Agricultural Information System (RAIS) including its future programs for CIARD advocacy and preparation of status report on ICT/ICM in AR4D in the region.

6.   Experiences of IRRI

Dr. Madonna C. Casimero, Project Scientist, Crops and Environmental Sciences Division, International Rice Research Institute (IRRI)

Presentations by CG Centers in progress

The presentation shared the programs under the Global Rice Science Partnership (GRiSP) and explained the public and private sector partners in major rice growing countries/international centersand linkages with NARES in helping IRRI's rice research reach farmers worldwide. It focused on the IRRI's approaches to last mile delivery through participatory adaptive research, print and video channels, participatory video development, use of ICT (websites, social media, e-learning tools and precision farming. The presentation highlighted the use of web-application in extension service, mobile phone application using interactive voice response (IVR) by the farmer and Nutrient Manager and Rice Crop Manager with the use of Smartphone application.

7. Experience of CIFOR

Ms. Sufiet Erlita, Data & Information Services Manager, Information Services Group (ISG), Center for International Forestry Research (CIFOR)

It explained the CIFOR's communication model for content creation, outreach publishing and dissemination and collaboration. CIFOR exploit potential use of social media, harvest to other databases and add popularity in order to increase accessibility to information; use dynamic and interactive website, and syndicate the information for increased readers; and follow international standard metadata and vocabularies, index through Google, work with publishers who have flexible policies on open access and publish and promote outputs for enhanced retrieval of relevant information.

8. New ICTs – How they contribute to Agricultural Innovation

Dr. Prabhat Kumar, Senior Research Specialist, Agriculture Systems and Engineering Field of Study, School of Environment, Resources and Development, AIT

The presentation shared some of the experiences of the AIT partnership programs in which application of Geographic Information System (GIS) was used in the project of Spatial and Temporal Analysis for Area-Wide Integrated Pest Management of Fruit Flies in South and Southeast Asia, and Cassava Pink Mealy Bug Project in the region.

9. Experience of WorldFish

Mr. Len Regidon Garces, Research Fellow, Natural Resources Management, WorldFish Center – Philippine

The WorldFish presentation illustrated its information and knowledge management services at global and regional levels that included Fish Base, Reef Base, Sea Life Base, Coral Triangle Atlas and Trawl Base etc. It explained the development and functions of Fish Base and Coral Triangle Atlas in detail and highlighted the WorldFish activities and its communication materials/programs.

Session 3: Opening Agricultural Research Information to All

Chair: *Dr. Malcolm Hazelman, F AO RAP*
Co-c hair: *Dr. Madonna C. Casimer o, IRRI*

Nine country presentations were made highlighting the current status of ICT/ICM in AR4D in the countries along with future plans. It was noticed that there has been significant progress reported in the use and application of ICT/ICM for AR4D at national level through country presentations. Brief abstracts of the presentations are given below:

10.   Cambodia

Dr. El Sotheary, Deputy Head, Socio-Economics Division, with Sim Theavy, Chief of Training Unit, Training and Information Center, Cambodian Agricultural Research and Development Institute (CARDI)

The presentation pointed out that resource poor farmers are the key beneficiaries, what direction and how the ICT/ICM intervention strategies should be fitted in? It suggested the need for Agri-ICT gateway for all Southeast countries, bilateral/multilateral ICT projects for agricultural sector in Cambodia, increasing the public awareness and more encouragement, delivering information to different beneficiaries through proper means, and improving 'sharing culture' to exchange information and knowledge. The presentation explained the objectives of Cambodian Agricultural and Rural Development Information Gateway (CARDiG), Cambodia Agricultural Market Information System (CAMIS) and Agricultural Information and Documentation Center (AIDOC). It also briefed about how Application of Electronic Marketing Information System (EMIS) and CARDI soil database function and provide services to users.

11.   Indonesia

Dr. Rohlini, Head of Research Planning Division, Indonesian Agency for Agricultural Research and Development (IAARD)

It reported that all research units have internet connection and headquarter equipped with high speed bandwidth which improved connectivity between research centers/institutions and flow of research information and research management. It mentioned systems developed by IAARD such as Information Systems (CMS-based website, mailing system, discussion forum for researchers, library and information network and access to scientific journal), Research Management Information System (e-Program, e-Money, e-Assets, Personnel MIS and e-Repository), Research Data and Information Services (GIS, Crop models, Indonesian Food Crops Knowledge Banks of Rice, Maize and Soybean, Germplasm database and Expert database), Agricultural Marketing Information Services (SMS Center, Advisory services and e-Product). The presentation discussed IAARD policy on ICT/ICM, ICT framework and approaches to increase community participations in sharing information and knowledge.

12.   Japan

Mr. Tomohide Sugino, Representative, Southeast Asia Liaison Office, JIRCAS

JIRCAS continues to strengthen ICT/ICM research in Asia and the Pacific, open database and on-line publications envisions that IRIS-AFF can work as "One stop information platform for International Agricultural Research collaborations in Japan". The presentation cited the current status of ICT/ICM developments in Japan and highlighted that farmers established their own website to promote their agricultural products; extension stations also established websites to provide various extension services and use of ICT/ICM for disclosing production history for traceability. It explained the application of ICT/ICM in JIRCAS in the areas of GIS studies, open databases (local vegetables of Thailand, soybean genetic resources in Northeast China and food production and consumption data in China), On-line publication and International Research Information System AFF (IRIS-AFF). According to the presentation, JIRCAS launched a Global-Scale International Research Network to establish a network for research organizations in Japan and to promote international collaborative research in order to acquire new knowledge to cope with global-scale issues such as food security, the environment and natural resources and elaborated the Japanese policy on international agricultural research through different ministries and links with global and region collaborations.

Country presentations in progress

13. Lao PDR

Mr. Manoluck Bounsihalath, Head of ICT Unit, National Agriculture and Forestry Research Institute (NAFRI)

Web 2.0 tools are widely used for web knowledge base, information and communication systems in Loa. Launching of Lao script keyboard driver has brought big change in opening access and online dialogue. The presentation shared information on online information and applications by National Agriculture and Forestry Research Institute (NAFRI) and National Agriculture and Forestry Extension Service (NAFES). It highlighted the initiatives such as the Agrobiodiversity Initiative (www.tabi.la), Information Sharing Mechanism on Plant Genetic Resources in Loa PDR (www.pgrfa.org/gpa/lao), Lao Agriculture Database and Loa44. Lao44 is an online platform for Lao information, which allows citizen to share their information and it contains more than 1800 document and 344 videos in Lao and cover all issues concerning development. Coalition for Lao Information, Communication and Knowledge (CLICK) project is another important initiative by 15 organizations with the commitment of opening access to information through online, off-line and SMS-based services for community development. Challenges under the availability, accessibility and ability to information sharing have been discussed which emphasizes need for improving content in Loa language, increasing investment in ICT infrastructure and improving ICT capacities.

14. Malaysia

Mrs. Rosna Amir, Director, Information Resource Management Division, Malaysian Agricultural Research and Development Institute (MARDI)

In the 10th Malaysia Plan where the new economic model is based on innovation, creativity and high value-added activities, ICT/ICM shall continue to play for agricultural innovations in Malaysia. The

presentation covered ICT initiatives that promote agricultural innovations in Malaysia which included projects under 1) Incentive Management System 2) Market Information System 3) Research, Development and Technology Transfer and 4) Social Communication Platform. Special mention made to initiatives such as eNelayan, ePengisytiharan, AgriBazaar 2.0, Ikan On-line, e-Pasartani, Supply-Demand Virtual Information (SDVI), Chilli Diagnostic Expert System, myFruits, MARDI InfoTech, MePIS and AgFood. Doktor Pokok (Plant Doctor) and other online agricultural communities use social networking tools and platform to reach farmers and other stakeholders. The way forward included broadband communication in the rural areas, ICT/ICM applications in Food Traceability (RFID), Nano Technology, Biosensor, Smart Packaging and Precision Agriculture etc.

15. Myanmar

Mr. Kyaw Lwin, Deputy Director, Department of Agricultural Planning and Mr. Kyaw Myaing, Junior Research Assistant, Department of Agricultural Research, Ministry of Agriculture and Irrigation (MOAI)

Integrated efforts are needed to develop ICT/ICM in each organization under MOAI for effective management and institutionalization. International technical and financial assistance are called for ICT/ICM development for NARS in Myanmar. The presentation attempted to describe the current status of ICT/ICM with regard to ICT insfrastucture and telecommunication systems which highlighted establishment of 6000 small satellite terminals at remote areas, TV networks (MRTV, MRTV-4, MITV, Myawady etc.), Radio channels (MBS, Padaukmyay, FMs etc.), Yadanarpon Cybercity, MICT park and private cybercafés in major cities. In order to achieve the goal of "emerging commercial & competitive agriculture through better informed farming system", it suggested a roadmap for ICT/ICM in NARS which empahises formualation of ICT/ICM policy, investment strategies, promotion of partnerships at national, regional and global levels, innovative use of existing mass and electronic media and capacity building.

16. Philippines

Dr. Lily Ann D. Lando, Chief Science Research Specialist, Applied Communication Division (ACD), Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development (PCAARRD)

PCAARRD's ICT/ICM-based strategies for enhancing service and customer engagement envision "keeping pace, touching base" to provide effective services for better impact. The presentation highlighted: 1) Message Board with 10,417 users dealing 3,865 topics, 2) and Short Message Service (http://opendbs.pcarrd.dost.gov.ph/sms)-which provides information on technologies, experts, and markets to more than 1,979 users, and 3) Quick Information Dispatch (QID) which facilitates information exchange in the Agriculture, Forestry, and Natural Resources (AFNR) sectors through mobile SMS technology. It suggested some important future directions in order to improve ICT/ICT use in AR4D which included impact assessement of ICT/ICM services, increasing customer engagement and feedback, use of appropriate technologies and sustaining community e-centers.

17. Thailand

Dr. Isiwat Bandrapiwat, Director of Agricultural Information Group, Information Technology Center, Department of Agriculture

It explained ICT Master Plan second phase (2009-2013) and status of ICT/ICM in agricultural sector in Thailand. The presentation demonstrated various information services rendered by the Department

of Agriculture website www.doa.go.th, use of social media, and mobile version of the website. It highlighted the services of Call Center via 1170 for farmers and general public, SMS-based information services to farmers through "*1677 Farmer Information Superhighway" on market trends, commercial crops, new farming techniques, interesting know-how, important news update, and warnings on weather conditions, and mobile application called "BaiKhao", compatible with Android 2.2 operating system, which provides estimation of nitrogen requirements of rice to farmers through calibrating the amount of fertilizer and urea by measuring the timing of the color of rice leaves (Leaf Color Chart) with four standard colors through mobile phone application.

18.   Vietnam

Dr. Nguyen Tang Ton, Head of Department, Research Management and Foreign Relations, Institute for Agricultural Science for Southern Vietnam and Mr. Vu Hong Quang, Researcher, Department of Science and International Cooperation, Department of Science and International Cooperation, Vietnam Academy of Agricultural Sciences (VAAS)

The presentation explained use and application of ICTs in transferring advanced technologies from research institutes in Vietnam. The initiatives included Rural Today Program on VTV1 weekly, Friends of Farmers Program on VTV1, VTV2 Program, Radio "the Voice of Vietnam", websites of different ministries and institutions related to agriculture and rural development. Linking Extension and Research Needs through Information Technology (LEARN-IT), Vietnamese Rice Knowledge Bank and Vietnam Maize Knowledge Bank initiatives were discusses. It suggested for increased investment in ICT/ICM, developing national agro-information networks, enhancing capacity, and developing English version of agricultural information and technologies etc.

Session 4:   Identifying and Bridging Gaps in ICM for Agricultural Innovation

Chair: *Dr. Ajit Maru, GFAR*
Co-Chair: *Dr. S. Attaluri, APAARI*

Participants were divided into three groups to brainstorm issues on gaps and activities that have solved or could have solved challenges related to themes viz., technological advances, institutional changes and participation of communities in ICT/ICM in AR4D. The group work was facilitated by three resource persons in identifying the gaps and prioritize actions under the themes. All participants took part in the group work very actively and provided important inputs from their experiences to identify issues and prioritize activities to address challenges of ICT/ICM in AR4D in the region. The outcome of the group work has been presented in Session 6.

Group work in progress

Group work on flip charts

Session 5: Coherence in Information for Agricultural Research for Development (CIARD)

Chair: *Dr. Ajit Maru, GFAR*
Co-Chair: *Mr. Gerard Sylvester, FAO RAP*

19. CIARD and CIARD activities for data and information sharing in the region

Mr. Gerard Sylvester, Knowledge and Information Management Officer, FAO RAP

Sharing of data and knowledge ushers greater equity in access and use of agricultural knowledge across and among communities and can lead to greater equity in the benefits of development efforts. The presentation explained the Coherence in Information for Agricultural Research for Development (CIARD) initiative, its manifesto, checklist, pathways, and services provided CIARD RING.

20. Building CIARD Global Framework and initiatives in the region

Dr. Ajit Maru, GFAR

The most important challenges to agricultural development such as from climate change, need for sustainable use of natural resources and energy, preventing spread of trans-boundary disease and pests, loss of agrobiodiversity cannot be tackled without improved and enhanced sharing of data, information and knowledge globally. The presentation explained the development of CIARD framework and issues

Presentations on CIARD

such as type of data/information to be shared, reusability of shared information, interoperability, emerging tools, standards and infrastructure. It proposed Action Areas for a Framework for Data and Information Sharing related to 1) technical aspects (CIARD RING, FAO AIMS, open standards for protocols, ontologies, vocabularies), 2) institutional issues (policies, strategies, rules, regulations, norms, reward and accountability and new institutions for governance of information flows); and 3) community participation issues (involvement of all actors and stakeholders, involvement of community to "pull" information such as done by social media, evidence for advocacy and strengthening CIARD community for advocacy and action).

21.   The CIARD RING for Sharing Data and Information for Agricultural Innovation and Participating in CIARD and CIARD RING

Dr. Aree Thunkijjanukij, Director and Ms. Thiranan Damrongson, Assistant Director, Thai National AGRIS Centre, Kasetsart University, Bangkok

The presentations explained the CIARD mandate, checklist and their adoption in developing Thai Agricultural Research Repository and Thai CIARD. It presented Thai Agricultural Research Repository, AGROVOC Plug-in DSpace, use of AGRIS subject categorization schemes for classification, open archives initiative, licensing policy, optimization of the websites, and use of social networking applications etc. It highlighted the Thai Agricultural Network (AgNet) started in year 2011 with the partnership of 44 academic faculties and 2 councils, 9 departments (Ministry of Agriculture and Cooperatives), several agricultural associations, publishers and coordinating centre etc., and explained the role and architecture of Thai National AGRIS Centre & National Agricultural Information Coordinating Centre. The Thai CIARD and steps on how to register an information services in the CIARD RING were demonstrated.

Session 6:   Improving ICM for Agricultural Innovations – the Way Forward

Chairman: Dr. Simon Hear n, ACIAR
Co-Chair :   Dr. Raj Paroda, APAARI

During the session, facilitators shared the outcomes of group work followed by open discussion. After taking inputs from discussions and comments by the chair, co-chair and expert resource persons, the following recommendations were made:

22.   Recommendations

- **Technologies Issues:** Use of smart phones, mobile technologies and videoconferencing, establishment of community e-Centres, promoting linked open data and standards in agricultural information management.

- **Institutional Transformation Issues:** Developing leadership, policies, and strategies; advocacy through success stories/policy briefs; developing capacity; increasing investment in ICT/ICM in agriculture and undertaking research in ICT/ICM.

- **Community Participation:** Involvement of local Governments/private sector, local experts/farmer scientists; Campaigning through Internet buses; preparation of success stories, use of mass media (radio and television) for rising awareness; creation of content in local language, information on traditional knowledge and value added services; establishing ICT centres/ICT training centres, technology literacy; free Internet access and software tools to community.

Session 7:   Plenary Session

The plenary session reinforced the need for a neutral platform like APAARI to strengthen cooperation in promoting ICT/ICM at different levels in the region through outscaling of innovation in ICT/ICM for AR4D; catalyze policies through success stories; create tool boxes to increase greater collaboration and sharing of ICT/ICM expertise; and develop capacity of master trainers in ICT/ICM.

It was identified that prioritization of ICT/ICM for end-users is essential for adopting suitable technologies. There is need for creation of content for end-user devices to reach messages to field in order to address needs of intermediaries, extension workers and farmers. It was identified that the role of APAARI is important in creation of enabling institutional environment for use of ICT/ICM in the national agricultural research systems. Regarding ensuring community participation in ICT/ICM initiatives, it was identified that the role of government is key to ensure participation of community and private sector and bring in synergies at the local level. Developing farmer leaders, building capacity of farmers in use of ICTs and information, catalyzing policies through success stories and linking farmers' organizations to markets through use of ICT/ICM initiatives are some of the important steps to be considered for improving ICM for agricultural innovations.

Plenary session in progress

Valedictory Program

The program ended with concluding remarks by Dr. Malcolm Hazelman, Dr. Ajit Maru, Dr. Fazle Karim, Head, IT, AIT Extension, Dr. Raj Paroda and Dr. Simon Hearn. In the valedictory, the dignitaries gave away certificates to participants.

Concept Note

Background

Agriculture in Southeast Asia now faces new challenges. After achieving significant progress in improving agricultural productivity, the region's countries now have the challenge of further making agriculture and farming more market oriented and integrated in their economies. The region's agriculture is increasingly also becoming export oriented. Because of these trends, rapid agricultural innovation becomes not only essential but also critical for further growth and development. The region has benefitted from significant changes in its information and communications technology revolution with Internet access and mobile telephony use now almost ubiquitous even in rural agricultural communities. It is now time to take stock of how improved information and communications management in national agricultural research and innovation systems, the main generators of organized, structured agricultural information, are making use of these ICTs and contributing to agricultural innovation within their own countries as also in the region and elsewhere.

One of the key criteria for progress and innovation is of "openness" in sharing information and skills. This openness in sharing information is also necessary for rapid innovation in market and export oriented agriculture. The current use of social media and what are called Web 2.0 and Web 3.0 tools offer significant potential in bringing greater openness in sharing, exchanging and effectively using information for agricultural innovation.

The Coherence in Information for Agricultural Research for Development (CIARD) movement (http://www.ciard.net), with more than 150 partners from across the world, is working collaboratively to make agricultural research information publicly available and accessible to all as also enabling effective use of this information for agricultural innovation. Its role in contributing further to agricultural development in the region needs to be considered.

The Asia-Pacific Association of Agricultural Research Institutions (APAARI) which is mandated to promote the development of National Agricultural Research Systems (NARS) in the Asia-Pacific region has been fostering use of ICT/ICM in AR4D in the region through its program Asia-Pacific Agricultural Research Information System (APARIS). APAARI as a key partner of the CIARD initiative has been facilitating the CIARD process in the Asia-Pacific region with the support of Global Forum on Agricultural Research (GFAR) and Food and Agriculture Organization (FAO). As part of Bridging Knowledge Gap activities towards the transformation of AR4D systems, as described in the GCARD Roadmap, APAARI organizes a series of sub-regional workshops with an objective to improve partnerships among NARS so as to strengthen capacities and skills of personnel to promote greater sharing of knowledge for outscalling of agricultural innovations and contribute to CIARD initiative. The present workshop is meant for the information and communication managers of NARS and organizations in Southeast Asian sub-region.

Objectives

The Workshop on Information and Communications Management (ICM) for Agricultural Innovation in Southeast Asia aims:

- To consider new dimensions in ICM for contributing to rapid agricultural innovation for market and export oriented agriculture that is fast emerging in Southeast Asia.

- To take stock of the current status of ICM in national systems of agricultural research and innovation and identify what technological, institutional and community participation related gaps need to be filled for improving availability, access, applicability and effective use of information for agricultural innovation.

- To promote greater involvement and participation of National Systems and Organizations in the CIARD movement and identify how the CIARD movement can further the cause of make agricultural research information publicly available and accessible to all as also enabling effective use of this information for agricultural innovation especially in the context of contributing to rapid agricultural innovation for an increasing market and export oriented agriculture.

Who should attend

The Workshop is for Information and Communication Managers who are nominated from National Agricultural Research and Innovation Systems and Organizations in Southeast Asia and especially those who are involved in the Asia-Pacific Agricultural Research Information System (APARIS) activities and CIARD partners or likely to be involved in the CIARD RING. About 35 Information and Communication Managers from NARS, CGIAR Centers and other organizations in the Southeast Asian Countries are expected to participate.

Workshop preparation

Participants will have to prepare jointly at the country/organization level and make brief (10 minutes) presentations of the current status and experiences of ICM activities from their systems/organizations that are contributing to agricultural innovation in their respective countries/regions with emphasis on the various technological, institutional (policy, regulatory, structural) and agricultural community participation issues and gaps they overcame or still face related to enabling greater availability, access, applicability and enabling effective use of information for agricultural innovation.

The participants are also expected to contribute through group activities, in a workshop mode, on how to promote further involvement and participation of National Systems and Organizations in the CIARD movement and identify how the CIARD movement can further the cause of make agricultural research information publicly available and accessible to all as also enabling effective use of this information for agricultural innovation especially in the context of contributing to rapid agricultural innovation for an increasing market and export oriented agriculture in Southeast Asia.

Venue

AIT Conference Center, Asian Institute of Technology (AIT), Khlong Luang, Pathum Thani, (Suburbs of Bangkok), Thailand from 27-29 September, 2011.

List of Participants

1.	**Dr. El Sotheary** Deputy Head Socio-Economics Division Cambodian Agricultural Research and Development Institute (CARDI) National Road No. 3, Prateah Lang Dangkor, Phnom Penh Cambodia Tel: +855 23 63 19693 Mobile: +855 97 54 78910 Fax: +855 23 219 800 E-mail: esotheary@cardi.org.kh	
2.	**Mrs. Sim Theavy** Chief of Training Unit Training and Information Center Cambodian Agricultural Research and Development Institute (CARDI) National Road No. 3, Prateah Lang Dangkor, Phnom Penh Cambodia Mobile: +855 012 964 925 Fax: +855 23 219 800 E-mail: cardi@cardi.org.kh	
3.	**Dr. Rohlini** Head of Research Planning Division Indonesian Agency for Agricultural Research and Development (IAARD) Jl. Ragunan No. 29, Pasar Minggu, Jakarta 12540 Indonesia Tel: +62 21 780 6202 Mobile: +62 818 947 500 Fax: +62 21 780 0644 E-mail: rohlini@litbang.deptan.go.id	
4.	**Mrs. Ir.Erlita Adriani** Head of Data and Management Information Sub Division Indonesian Agency for Agricultural Research and Development (IAARD) Jl. Ragunan No. 29, Pasar Minggu, Jakarta Indonesia Tel: +62 21 780 6202 Mobile: +62 817 917 5432 Fax: +62 21 780 0644 E-mail: lita@litbang.deptan.go.id erlita_hb@yahoo.com	

5.	**Ms. Siti Nurjayanti** Head, Subdivision of HRD Planning Indonesian Agency for Agricultural Research and Development (IAARD) Jl. Ragunan No. 29, Pasar Minggu, Jakarta Indonesia Tel: +62 21 780 6202 Mobile: +62 856 892 3359 Fax: +62 21 780 0644 E-mail: nur_jay@yahoo.com nur@litbang.deptan.go.id	
6.	**Mr. Manoluck Bounsihalath** Head of ICT Unit National Agriculture and Forestry Research Institute Nongviengkham, Xathanee District, Vientiane Lao PDR Tel: +856 21 770892 Mobile: +856 20 22475757 Fax: +856 21 770892 / +856 21 770094 E-mail: manoluck@nafri.org.la	
7.	**Mr. Manivanh Moukda** Officer, Information Extension Unit National Agriculture and Forestry Extension Service (NAFES) Km 15, Donteiw village Xaythany district, Vientiane Capital Lao PDR Tel: +856 21 740253 Mobile: +856 20 55997735 Fax: +856 21 740253 E-mail: m_moukda@yahoo.com	
8.	**Mrs. Rosna Amir** Director Information Resource Management Division Malaysian Agricultural Research and Development Institute (MARDI) IBU Pejabat MARDI, Persiaran, MARDI – UPM 43450 Serdang, Selangor Malaysia Tel: +603 8943 7150 Mobile: +601 9223 8419 Fax: +603 8943 1543 / 8650 E-mail: rosna@mardi.gov.my	
9.	**Ms. Jariah Mohd Noor** Deputy Director Information Resource Management Division Malaysian Agricultural Research and Development Institute (MARDI) IBU Pejabat MARDI, Persiaran, MARDI – UPM 43450 Serdang, Selangor Malaysia Tel: +603 8943 8641 Mobile: +601 2768 1206 Fax: +603 8443 1543 / 8650 E-mail: mnjariah@mardi.gov.my	

10.	**Mr. Kyaw Lwin** Deputy Director Department of Agricultural Planning Ministry of Agriculture and Irrigation Building No. 15, Nay Pyi Taw, Myanmar Tel: +095 0674 10528 Mobile: +094 929 6881 Fax: +095 6741 0111 E-mail: kyawlwin.dap@gmail.com	
11.	**Mr. Kyaw Myaing** Junior Research Assistant Department of Agricultural Research Ministry of Agriculture and Irrigation Yesin, Nay Pyi Taw Myanmar Tel: +095 067 416 531 Fax: +095 067 416 535 E-mail: kyawmyaing.007.water@gmail.com	
12.	**Dr. Lily Ann D. Lando** Chief Science Research Specialist Applied Communication Division (ACD) Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development (PCAARRD) Paseo de Valmayor, Los Baños, Laguna, 4030 Philippines Tel: +049 536 0014 Mobile: +0918 533 4512 Fax: +049 536 0016, +049 536 7922 E-mail: ld_lando@yahoo.com l.lando@pcarrd.dost.gov.ph	
13.	**Mr. Ricaredo V. Manzanilla** Supervising Science Research Specialist Management Information Services Division (MISD) Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development (PCAARRD) Paseo de Valmayor, Los Baños, Laguna, 4030 Philippines Tel: +63 049 5360014 Mobile: +63 090 62421601 Fax: +63 049 5360016 E-mail: r.manzanilla@pcarrd.dost.gov.ph	
14.	**Mrs. Sermporn Keungphuttaphong** Director of Information Technology Center Department of Agriculture 50 Phaholyothin Rd., Chatuchak, Bangkok 10900 Thailand Tel: +662 561 1924 Mobile: +66 8192 77283 Fax: +662 940 5415 E-mail: sermporn.k@doa.in.th	

15.	**Dr. Isiwat Bandrapiwat** Director of Agricultural Information Group Information Technology Center Department of Agriculture, Thailand 50 Phaholyothin Rd., Chatuchak, Bangkok 10900 Thailand Tel: +662 940 6872 ext. 143 Mobile: +66 83 361 24296 Fax: +662 940 6874 E-mail: isiwat@gmail.com	
16.	**Dr. Nguyen Tang Ton** Head of Department Research Management and Foreign Relations Institute for Agricultural Science for Southern Vietnam 121 Nguyen Benh Khiem, Ho Chi Minh City Vietnam Tel: +84 8 3910 3408 Mobile: +84 918 071 620 Fax: +84 8 3829 750 E-mail: tangton52@gmail.com	
17.	**Mr. Vu Hong Quang** Researcher Department of Science and International Cooperation Vietnam Academy of Agricultural Sciences Viet Quynh, Thanh Tri, Hanoi Vietnam Tel: +84 436 810216 Mobile: +090 2231826 Fax: +84 436 810216 E-mail: hongquangvaas@yahoo.com.vn	
18.	**Mr. Tomohide Sugino** Representative Southeast Asia Liaison Office Japan International Research Center for Agricultural Sciences (JIRCAS) 50 Phaholyothin Rd., Ladyao Chatuchak, Bangkok 10900 Thailand Tel: +66 2 561 4743 Mobile: +66 8180 87472 Fax: +66 2 940 5949 E-mail: tosugino@jircas.affrc.go.jp	
19.	**Ms. Sufiet Erlita** Data & Information Services Manager Information Services Group (ISG) Center for International Forestry Research (CIFOR) Jl. CIFOR, Situ GEDE, Bogor, Barat 16115 Indonesia Tel: +62 251 8622 622 Mobile: +62 819 2000 240 Fax: +62 251 8622 100 E-mail: s.erlita@cgiar.org	

20.	**Dr. Madonna C. Casimero** Project Scientist Crops and Environmental Sciences Division International Rice Research Institute (IRRI) Los Baños, Laguna 4031 Philippines Tel: +63 2 580 5600 ext. 2618 Mobile: +63 917 509 6737 Fax: +63 2 580 5699, +63 2 845 0606 E-mail: m.casimero@cgiar.org	
21.	**Mr. Len Regidon Garces** Research Fellow Natural Resources Management WorldFish Center – Philippine Country Office C/o SEARCA, College, Los Baños, Laguna 4031 Philippines Tel: +63 49 536 0202 Mobile: +69 917 8220637 Fax: +63 49 5360202 E-mail: L.GARCES@CGIAR.ORG	
22.	**Dr. Oleg Shatberashvili** Consultant CACAARI 6th Floor, Kostava Street 0179, Tbilisi Georgia Tel: +995 32 2335122 Mobile: +955 577 400487 Fax: +955 32 2335122 E-mail: gfid@caucasus.net oleg.shatberashvili@yahoo.com	
ACIAR		
23.	**Dr. Simon Hearn** Principal Adviser Australian Centre for International Agricultural Research (ACIAR) G.P.O. Box 1571 Canberra, ACT 2601 Australia Tel: 61 2 6217 0547 Mobile: 0408 270 337 Fax: 61 2 6217 0501 E-mail: hearn@aciar.gov.au	

APAARI		
24.	**Dr. Raj Paroda** Executive Secretary Asia-Pacific Association of Agricultural Research Institutions (APAARI) FAO RAP of the UN Maliwan Mansion, 39 Phra Atit Road Bangkok 10200 Thailand Tel: 91 11 65437870 Mobile: 91 9810191486 Fax: 91 11 25843243 E-mail: raj.paroda.@yahoo.com	
25.	**Dr. S. Attaluri** Coordinator Asia-Pacific Agricultural Research Information System (APARIS) Asia-Pacific Association of Agricultural Research Institutions (APAARI) FAO RAP of the UN, Maliwan Mansion 39 Phra Atit Road, Bangkok 10200 Thailand Tel: 66 2 697 4372 Mobile: 66 8 7554 2026 Fax: 66 2 697 4408 E-mail: attaluri@apaari.org	
26.	**Ms. Urairat Rujirek** Administrative Associate Asia-Pacific Association of Agricultural Research Institutions FAO RAP of the UN, Maliwan Mansion 39 Phra Atit Road, Bangkok 10200 Thailand Tel: 66 2 697 4371 Mobile: 66 8 1918 6121 Fax: 66 2 697 4408 E-mail: urairat@apaari.org	
GFAR		
27.	**Dr. Ajit Maru** Senior Knowledge Officer Global Forum on Agricultural Research (GFAR) Secretariat C/o FAO, viale delle Terme di Caracalla 00153 Rome, Italy Tel: 39 06 5705 4022 Fax: 39 06 5705 3898 E-mail: ajit.maru@fao.org	

FAO		
28.	**Dr. Malcolm Hazelman** Senior Extension, Education and Communications Officer Food and Agriculture Organization of the United Nations FAO Regional Office for Asia and the Pacific Maliwan Mansion 39 Phra Atit Road Bangkok 10200, Thailand Tel: 662 697 4145 Fax: 662 697 4445 E-mail: Malcolm.Hazelman@fao.org	
29.	**Mr. Gerard Sylvester** Knowledge and Information Management Officer Food and Agriculture Organization of the United Nations FAO Regional Office for Asia and the Pacific Maliwan Mansion 39 Phra Atit Road Bangkok 10200, Thailand Tel: 662 697 4365 Fax: 662 697 4445 E-mail: Gerard.Sylvester@fao.org	
KASETSART UNIVERSITY		
30.	**Dr. Aree Thunkijjanukij** Director Thai National AGRIS Center Kasetsart University 50 Ngamwongwan Road, Chatuchak Bangkok 10900, Thailand Tel: 66 2 942 8616 ext. 401 Mobile: 66 81 207 1822 Fax: 66 2 940 5834 E-mail: thunkijja@yahoo.com	
31.	**Ms. Thiranan Damrongson** Assistant Director Thai National AGRIS Center Kasetsart University 50 Ngamwongwan Road, Chatuchak Bangkok 10900, Thailand Tel: 66 2 942 8616 ext. 331 Mobile: 66 89 1210487 Fax: 66 2 940 5834 E-mail: thiranun@yahoo.com	

32.	**Ms. Wanpen Srijankul** Information Spacialist Thai National AGRIS Center Kasetsart University 50 Ngamwongwan Road, Chatuchak Bangkok 10900, Thailand Tel: 66 2 942 8616 Mobile: 66 89 105 8778 Fax: 66 2 940 6688 E-mail: onepen23@gmail.com	
33.	**Mr. Bordin Phonphunpoa** Information Specialist Thai National AGRIS Center Kasetsart University 50 Ngamwongwan Road, Chatuchak Bangkok 10900, Thailand Tel: +66 2 942 8616 Mobile: +66 89 155 6375 Fax: +66 2 940 6688 E-mail: libbdp@ku.ac.th	
34.	**Ms. Suraporn Kongphol** Information Spacialist Thai National AGRIS Center Kasetsart University 50 Ngamwongwan Road, Chatuchak Bangkok 10900, Thailand Tel: 66 2 942 8616 ext. 336 Mobile: 66 87 005 6336 Fax: 66 2 940 6688 E-mail: surapornk@hotmail.com	
ASIAN INSTITUTE OF TECHNOLOGY		
35.	**Mr. Fazle Karim** Head, IT & Engineering Unit AIT Extension Asian Institute of Technology P.O. Box 4, Khlong Luang Pathum Thani 12120, Thailand Tel: +66 2 524 5311 Mobile: +66 86 079 2595 Fax: +66 2 524 6332 E-mail: karim@ait.ac.th	
36.	**Dr. Md. Zakir Hossain** Head, Agriculture, Resources & Environment Unit AIT Extension Asian Institute of Technology P.O. Box 4, Khlong Luang Pathum Thani 12120, Thailand Tel: +66 2 524 5268 Mobile: +66 81 694 0759 Fax: +66 2 524 6332 E-mail: zakir@ait.ac.th	

37.	**Ms. Niramol Ponvilai** Head, Administrative & Technical Support Unit AIT Extension Asian Institute of Technology P.O. Box 4, Khlong Luang Pathum Thani 12120, Thailand Tel: +66 2 524 5339 Mobile: +66 81 753 3097 Fax: +66 2 524 6332 E-mail: niramol@ait.ac.th	
38.	**Ms. Evanshainia Syiem** Program Officer AIT Extension Asian Institute of Technology P.O. Box 4, Khlong Luang Pathum Thani 12120, Thailand Tel: +66 2 524 6508 Mobile: +66 86 600 1281 Fax: +66 2 524 6332 E-mail: evan83@ait.ac.th	
39.	**Ms. Pattama Chaiyapan** Assistant IT Officer AIT Extension Asian Institute of Technology P.O. Box 4, Khlong Luang Pathum Thani 12120, Thailand Tel: +66 2 524 5302 Mobile: +66 89 439 0371 Fax: +66 2 524 6332 E-mail: pattamac@ait.ac.th	
40.	**Mr. Prinya Boonrit** Training Support Technician AIT Extension Asian Institute of Technology P.O. Box 4, Khlong Luang Pathum Thani 12120, Thailand Tel: +66 2 524 5320 Mobile: +66 81 814 4332 Fax: +66 2 524 6332 E-mail: prinyab@ait.ac.th	
41.	**Ms. Nalinee Kongkerd** Administrative Assistant AIT Extension Asian Institute of Technology P.O. Box 4, Khlong Luang Pathum Thani 12120, Thailand Tel: +66 2 524 5332 Mobile: +66 85 938 9374 Fax: +66 2 524 6332 E-mail: nalinee_kfine@hotmail.com	

Program

Day 1 (27 Sept., 2011)

08:30-09:00	Registration	
	Inaugural Session	
	Chairperson: Dr. Simon Hearn	
	Co-Chair: Dr. Ajit Maru	
09:00-09:07	Welcome Address	Dr. Raj Paroda, Executive Secretary, APAARI
09:07-09:25	Introduction of Participants	
09:25-09:30	General Remarks	Dr. Malcolm Hazelman, FAO RAP
09:30-09:40	General Remarks	Dr. Ajit Maru, GFAR
09:40-09:55	Special Address	Guest of Honour – Prof. Said Irandoust, President, AIT
09:55-10:15	Release of Publications and Inaugural Address	Chief Guest – Mr. Hiroyuki Konuma, ADG and RR for AP, FAO RAP
10:15-10:25	Chairman's Concluding Remarks	Dr. Simon Hearn, Principal Adviser, ACIAR & Chair, APARIS Steering Committee
10:25-10:30	Vote of Thanks	Dr. S. Attaluri, APARIS Coordinator
10:30-11:00	Coffee break and Group Photo	

	Session 1: New Dimensions in ICM for Agricultural Innovations	
	Chair: Dr. Raj Paroda, APAARI	
	Co-chair: Dr. Jonathan Shaw, AIT	
11:00-11:20	Role of APARIS in Regional Agricultural Information Exchange for Agricultural Innovation	Dr. S. Attaluri, APAARI
11:20-11:40	Managing Information for Agricultural Innovation – ACIAR Experience	Dr. Simon Hearn, ACIAR

11:40-12:00	New Challenges for Agricultural Innovation in Southeast Asia – How ICM contributes to solving them?	Dr. Ajit Maru, GFAR
12:00-12:20	Agricultural Innovation Systems in the Asia-Pacific region – How ICM help resource poor farmers	Dr. Malcolm Hazelman, FAO RAP
12:20-13:00	Open discussion	
13:00-14:00	Lunch	

	Session 2: ICM for Innovation through the Consortium Research Projects and Regional Fora	
	Chair: Dr. Simon Hearn, ACIAR	
	Co-chair: Ms. Rosna Amir, MARDI	
14:00-14:20	Experience of CACAARI	Dr. Oleg Shatberashvili Central Asia and the Caucasus Association of Agricultural Research Institutions (CACAARI)
14:20-14:40	Experiences of IRRI	Dr. Madonna C. Casimero International Rice Research Institute (IRRI)
14:40-15:00	Experience of CIFOR	Ms. Sufiet Erlita Center for International Forestry Research (CIFOR)
15:00-15:30	Coffee break	
15:30-15:50	New ICTs – How they contribute to Agricultural Innovation	Dr. Prabhat Kumar Senior Research Specialist Agriculture Systems and Engineering Field of Study, School of Environment, Resources and Development, AIT
15:50-16:15	Experience of WorldFish	Mr. Len Regidon Garces, WorldFish
16:15-17:00	General Discussion	
19:00-	Reception Dinner by APAARI	

Day 2 (28 Sept., 2011)

	Session 3: Opening Agricultural Research Information to All	
	Chair: Dr. Malcolm Hazelman, FAO RAP	
	Co-chair: Dr. Madonna C. Casimero, IRRI	
09:00-10:00	Presentations of Country Experiences on how ICM has contributed to 'Agricultural Innovation Systems' in their countries with emphasis on what were the Technological, Institutional and Community Participation issues and how these issues/gaps were filled in contributing to innovation. **Countries:** Cambodia, Indonesia, Japan, Lao PDR.	About 15 min. presentation by each country followed by discussion on each presentation.
10:00-10:15	Coffee break	
10:15-11:15	Country presentations continue.... **Countries:** Malaysia, Myanmar, Philippines, Thailand, Vietnam.	About 15 min. presentation by each country followed by discussion on each presentation.

	Session 4: Identifying and Bridging Gaps in ICM for Agricultural Innovation	
	Chair: Dr. Ajit Maru, GFAR	
	Co-chair: Dr. S. Attaluri, APAARI	
11:15-12:30	Group Work (three thematic groups) on the issues/gaps, prioritization of issues/gaps, how they were solved/can be solved. Group-I: Technologies Group Group-II: Institutional Group Group-III: Community Group	Group facilitators: Dr. S. Attaluri, APAARI Mr. Gerard Sylvester, FAO RAP Dr. Aree Thunkijjanukij, Kasetsart University.
12:30-13:30	Lunch	

	Session 5: Coherence in Information for Agricultural Research for Development (CIARD)	
	Chair: Dr. Ajit Maru, GFAR	
	Co-chair: Mr. Gerard Sylvester, FAO RAP	
14:30-15:00	CIARD and CIARD activities for data and information sharing in the region	Mr. Gerard Sylvester, FAO RAP
15.00-15:30	Building CIARD Global Framework and initiatives in the region	Dr. Ajit Maru, GFAR
15:30-15:45	Coffee break	
15:45-17:15	The CIARD RING for Sharing Data and Information for Agricultural Innovation; Participating in CIARD and CIARD RING	Dr. Aree Thunkijjanukij, Kasetsart University

Day 3 (29 Sept., 2011)

	Session 6: Improving ICM for Agricultural Innovations – the Way Forward	
	Chairman: Dr. Simon Hearn, ACIAR	
	Co-Chair: Dr. Raj Paroda, APAARI	
09:00-10:00	Group Work Presentations and discussions Open Discussion on: Key Issues and Identified Gaps and Solutions	
10:00-11:00	Open discussion on: • ICM strategies for Agricultural Innovations • Strengthening Regional Agricultural Information System (RAIS) • Building on the CIARD framework • Strengthening Agricultural Innovation Systems at national level. • Workshop Recommendations	
11:00-11:30	Coffee break	

11:30-12:30	**Session 7: Plenary Session**	
	Valedictory Program Concluding Remarks by:	Dr. Malcolm Hazelman, FAO RAP Dr. Ajit Maru, GFAR Dr. Jonathan Shaw, AIT Dr. Raj Paroda, APAARI Dr. Simon Hearn
	Vote of thanks	Dr. S. Attaluri, APAARI
	Workshop close	
12:30-14:00	Lunch	
14:00-17:30	APARIS Steering Committee Meeting	For members only