

5th ICM4ARD Inter-Regional Workshop

11/12/2009

ICRISAT, Patancheru (Hyderabad), India

Proceedings

Chair: Ajit Maru, GFAR

Ajit Maru (GFAR) welcomed the participants in the 5th ICM4ARD meeting and gave an overview of the birth and the progress of the Information and Communication Management for Agricultural Research for Development (ICM4ARD) Global Partnership Programme (GPP) of the Global Forum on Agricultural research (GFAR).

In 2002-2003 the awareness of the lack of coordination between global organizations in the efforts to improve ICM for ARD through different and sometimes conflicting initiatives and projects made clear that there was a need for some form of global partnership in ICM. GFAR first involved the other global partners in the Global.RAIS initiative and then in 2004 created the ICM4ARD GPP. The ICM4ARD GPP focuses on four issues: advocacy, capacities of IC managers, integration and coherence in information management and improving the governance of the information flow. The major activities within the GPP have been the several regional and inter-regional workshops held every year, where the main actors in ICM for ARD at the regional and global level have been regularly meeting to discuss the state and progress of ICM under the four areas listed above.

Stephen Rudgard (FAO) related how in the past years international organizations have been asking themselves how they can be more effective in ICM and how they all realized that they could not achieve much by themselves: although FAO is big, the Unit that deals with knowledge exchange and outreach (KCEF) is small, and so are the GFAR Secretariat and the groups that work with ICM in other global organizations. Hence the awareness that the more these groups and units collaborate, the more they can achieve. The ICM4ARD in 2004 gave some sense of unity and showed that we could do more with less. In 2008, a broader initiative was founded by several key global and regional actors: the Coherence in Information for Agricultural research for Development (CIARD). CIARD does not cover the whole of ICM and does not replace the ICM4ARD GPP, but it gives its partners a context for their own ICM initiatives, like AGRIS for FAO.

V. Balaji (ICRISAT) briefly welcomed the participants and underlined the importance of collaboration and coherence in a field like ICM, in which actors had the tendency to do the same things several times in different ways.

Ajit Maru concluded the introduction to the meeting by adding that, while preparing the 2010 Global Conference on ARD (GCARD), GFAR realized the importance of learning and education in the context of ICM. The last GFAR Steering Committee meeting therefore decided to add the learning component to the areas of competence of the Regional Agricultural Information Systems (RAIS), thus broadening their scope and renaming them Regional Agricultural Information and Learning Systems (RAILS), which had already happened in the case of the FARA RAILS.

The agenda of the meeting (see Annex 1) included a review of ICM4ARD-related activities from the GFAR Secretariat since the last ICM4ARD meeting in 2007 and regional reviews from the member RAIS.

Ajit Maru presented the review of ICM4ARD-related activities conducted by the GFAR Secretariat since 2007. The full review is attached as Annex 3. The points that were highlighted during the presentation were:

- The GFAR Secretariat has advocated for funds and has received funding of about 180-220,000 USD. Funds have been used to support regional workshops, to support EGFAR-related activities and to specifically support the CACAARI RAIS.
- Advocacy of ICM by the GFAR Secretariat has been fairly successful: the importance of ICM was recognized at the Science Forum 2009 in Wageningen and GFAR has contributed to the recognition of CIARD on the part of regional and national partners.
- The impact of the ICM4ARD GPP has to be better demonstrated at the regional and national level.
- The role of the GFAR Secretariat is to take up “kick-start” activities, e.g. for strengthening the RAIS.
- The GFAR Secretariat has been very active within CIARD, especially with the CIARD RING project.
- Substantial work has been done on the EGFAR website, both from the communications point of view (better management of news, new graphic design) and from the technical point of view: more information on this is available in the report of the 2nd EGFAR Task Force, Hyderabad, 2009.
- GFAR has participated in several ICM-related events (see Annex 3) and has produced papers for Conferences and journals, in particular the IAALD special issue on “...”.
- At the 2008 Steering Committee meeting in Montevideo, the Knowledge for All programme was proposed and accepted. This programme covers ICM, EGFAR and education and learning including YPARD. Through the Knowledge for All programme, now learning is embedded in the GFAR PoW and BP.
- GFAR supports initiatives that are related to innovation, like the Agricultural Science and Technology Indicators (ASTI) initiative and the initiatives on advisory services: GFAR will support and participate in the upcoming workshop on agricultural advisory services in Alexandria.
- Linking up the ICM4ARD GPP with the Linking Farmers to Markets (LFM) GPP is essential.
- GFAR co-organized the Science Forum, the CIARD regional workshops, several RAIS workshops and now this Inter-regional workshop on ICM in Hyderabad.

Ajit Maru concluded his presentation with the observation that now GFAR and its partners have to see how to go ahead with the learning component in the ICM4ARD framework.

Hamed Sulaiman Ali Al-Dhuli (Ministry of Agriculture, Sultanate of Oman) presented the review of the AARINENA-RAIS activities. The full review is attached as Annex 4. The points that were highlighted during the presentation were:

- Within the national members of the AARINENA RAIS, discussions focused around the need to start from the national level to build up the regional level: with this objective, national focal points were created in each country. Also with regard to the

global level, GFAR and FAO can facilitate the process, but then the national level managers have to take up the initiatives.

- ICM4ARD in the WANA region has been a sleeping process because the national level is slow in taking up projects and activities, especially because of the lack of resources: the way forward in order to strengthen ICM in ARD is to strengthen the national level.
- In the WANA region there is no collaboration between countries: there is a need for good advocacy material to convince the national level to build networks between countries.

Attaluri Srinivasacharyulu (APAARI) presented the review of the APARIS activities. The full review is attached as Annex 5. The points that were highlighted during the presentation were:

- As far as governance is concerned, regular meetings of the APARIS Steering Committee have been held.
- In the advocacy area, sensitization workshops have been held.
- In capacity building, a technical workshop was held in 2008 in Bangkok and a partnership is in place with the Asia Institute of Technology (AIT).
- In the area of coherence and integration of information, APARIS representatives have participated in information sharing events like the regional meeting of the CAC-RAIS and the e-agriculture week in Rome in September 2007.
- The new APAARI website was launched, with more user-friendly functionalities and Web 2.0 features.
- The work plan 2010 includes:
 - o communications strategy for all the stakeholders in the region;
 - o capacity building: technical workshops with the support of GFAR and FAO, in particular a training course for contributing to the CIARD RING;
 - o collaboration with other Regional Forums and global initiatives;
 - o bringing the CIARD agenda into the region: a Pacific CIARD regional workshop is planned;
 - o updating the survey on the “Status of ICT in agriculture” in the region through a questionnaire and collecting new case studies.

Sherzod Qosimov (CACAARI) presented the review of the CAC-RAIS activities. The full review is attached as Annex 6. The points that were highlighted during the presentation were:

- The member countries identified the strategies and priorities in ICM4ARD: a) sensitization of National Agricultural Research Systems (NARS) leaders; b) supporting the development of NAIS; c) strengthening national lead centers.
- The third meeting of CAC-RAIS was held in April 2009.
- The CACAARI website was improved and future plans include an online directory of institutions and, in the long term, information services for different stakeholders.
- A database of NGOs and Farmers Organizations is being built.

After the presentation by Mr. Qosimov, Ajit Maru pointed out that CACAARI is a relatively new entry among the Regional Forums and that progress in ICM in this region has been strongly hindered by the dissolution of the Soviet Union. This region needs considerable support in ICM and in enabling learning as also knowledge sharing within the region and globally.

Dady Demby (FARA) presented the review of the FARA-RAILS activities. The full review is attached as Annex 7. The points that were highlighted during the presentation were:

- FARA already shifted from the concept of RAIS to that of RAILS in 2006.
- The key objective of the FARA-RAILS project is “connecting people”.
- Many initiatives were conducted in the advocacy area:
 - o success stories about national systems were published (KAINET, Ghana, Zambia);
 - o FARA, under the RAILS project, hosted the CIARD regional workshop in Ghana in June 2009;
 - o Advocacy for support in ICT with the African Union: FARA is the “technical arm” of the African Union.
- In capacity building, training was provided to the RAILS focal points.
- Regarding integration of information and coherence, FARA is heavily using Web 2.0 tools for capturing and sharing information and the eRAILS platform supports organizations in creating their own websites: 33 websites have been created so far.
- The FARA-RAILS project has also been working on improving the governance of information flows and the sharing of information, for example through the RAILS DGroup and the RAILS learning teams. Also in order to assess and improve the current information flow and the level of information sharing, a survey to assess existing innovation farmer advisory services was conducted.

Viviana Palmieri (FORAGRO/IICA) presented the review of the INFOTEC activities. The full review is attached as Annex 8. The points that were highlighted during the presentation were:

- Advocacy:
 - o One way of advocating the importance of ICM4ARD is providing evidence: in 2007 INFOTEC published a set of success stories, a document on the status of IM and ICT capacities in the NARS, and prepared a communication strategy for advocacy. Regarding assessment, through IICA participation in the ASTI study for Central America, it was possible to gather information on access, connectivity and ICT capacities in ARD organizations.
 - o Among other opportunities to address audiences, during the FORAGRO Montevideo meeting in 2008, focused on institutional innovations, a parallel session was held on IM and IP issues and conclusions were included in the Montevideo Final Declaration.
- Capacity building activities were conducted in order to strengthen the ability to share information: a) meetings of non-IM people for sharing basic concepts and experiences; b) peer-to-peer sharing of experiences between IM professionals through a community of practice; c) identification of key people in national organizations; d) training of partners in the use of the INFOTEC system, used by partners to build their own information systems.
- The CIARD regional workshop for the LAC region held in Lima in October 2009 was an occasion for key ICM actors in the region to meet and start forming a community.
- As far as integration of information and coherence are concerned:
 - o INFOTEC is an interactive system and shares the same platform and database as other regional information systems.
 - o INFOTEC covers all kinds of information, not only Scientific and Technical Information (STI), because it has to serve all its stakeholders; the fact that

CIARD opens up to all types of information makes it relevant for the IM issues of a system like INFOTEC.

- A governance structure for INFOTEC has not been necessary so far: the FORAGRO Executive Committee takes the decisions.
- Most important challenges and future activities: a) a certification programme for ICM for innovation; b) including ICM in the re-organization of extension services ; c) consolidation of the CIARD-LAC group; d) “modernizing” the INFOTEC technical platform.

Ajit Maru then introduced the themes for discussion. The main question was “What do we do now?”

The main challenges and opportunities he identified were:

- Planning: the GFAR Plan of Work is always one year behind because the GFAR Secretariat doesn't know what the RFs are going to do and what resources they need. GFAR needs a workplan (including resources and support needed from GFAR) from each RAIS.
- Advocacy to donors: there is a need for mechanisms that demonstrate the impact of improved ICM.
- GCARD 2010:
 - - o Lessons learnt during the preparation of the GCARD consultations: identifying whom to contact in the regions is difficult: lists of organizations, Ministries, NARS etc. are not available. The GCARD process requires GFAR to have access to such lists in order to justify balanced representation at the regional level and ensure inclusiveness. Therefore, GFAR needs the assurance from the RFs that such lists will be available.
Dady Damby replied that FARA has networks of FOs, NGOs and private sector organizations that can provide this information and Stephen David Hazemann of the Secretariat of the Pacific Community (SPC) said that they can provide extensive lists of this kind.
 - o The team preparing the documents for GCARD needs access to specific policy documents (plans, strategies, programmes of work) from the national systems. Alexander Sideridis of the Agricultural University of Athens informed that building inventory-like databases of this kind at a central level is an ongoing activity at EFITA, although difficult to sustain.
Stephen David Hazemann said that in Asian countries there is a directive from the Ministries that the national policies should be aligned with the national development strategies
Dady Demby observed that some countries do not have these policies and asked if the ICM4ARD community can support the development of such strategies. Ajit Maru replied that this is not something that the ICM4ARD GPP can take up but GFAR can. He, as Coordinator of ICM4ARD GPP, will take the issue to GFAR.
- Defining action plans for NAIS and RAIS within CIARD:
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- Action plans should include extensive advocacy and the use of the available CIARD Pathways.
- NAIS and RAIS should register their services in the CIARD RING.
- Ajit Maru highlighted that within the ICM4ARD framework it is important that partners commit to include these actions in their workplans and participants agreed that they would do it.
- Stephen Rudgard illustrated the FAO perspective regarding expected contributions to CIARD from the partners:
 - contribution to the Pathways (CIARD will provide better instructions on the Pathways and the RING);
 - evidence on how partners have implemented the CIARD checklist (CIARD will design a template for gathering evidence);
 - adopting the benchmarking methods used by the CGIAR and use them for advocacy;
 - translating CIARD material in local languages;
 - adopting advocacy toolkits designed by professionals and provided by CIARD through the RFs;
 - putting CIARD in the regional agenda, for example the FARA RAILS could put CIARD in the context of the FARA General Assembly and other regional venues could be identified to promote the CIARD agenda.

Regarding FARA, Dady Demby replied that an informed decision can only be made after going through all the information.

- Strengthening the RAIS.

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Where there has been professional support things are better, while where resources are missing things are not starting up. In some small measure the GFAR Secretariat can support the strengthening of the RAIS and Ajit Maru invited the RAIS to make it clear whether they need support or not.

Attaluri Srinivasacharyulu said that APARIS might need some support. Representatives from other Asian countries confirmed that they might need support as well and Attaluri was invited to find a mechanism to facilitate the process through which the GFAR Secretariat can provide this support.

Before the closure of the meeting, Stephen Rudgard invited the ICM4ARD community to participate in the Forum on ICM and ICTs for development that is being launched by the iNARS community and the e-agriculture community.

Ajit Maru thanked all participants and officially closed the 5th ICM4ARD meeting.

Annex 1

Agenda of the 5th ICM4ARD meeting

Agenda of the 5th ICM4ARD Inter-regional Meeting **11th December 2009** **9:00 – 11:30**

- 09:00 Welcome by ICM4ARD Coordinator
- 09:05 Presentation of the report on ICM4ARD from the GFAR Secretariat
- 09:20 Presentation of the report from AARINENA
- 09:35 Presentation of the report from APAARI
(including questionnaire for the ICT Status Report in the region)
- 10:05 Presentation of the report from CACAARI
- 10:20 Presentation of the report from FARA
- 10:35 *Tea*
- 10:50 Presentation of the report from FORAGRO
- 11:05 Moving forward with the ICM4ARD GPP: agenda and conclusions.

Annex 2

List of participants

Ajit Maru	Senior Knowledge Officer, GFAR Secretariat, C/o FAO/NRR, Viale delle Terme Di Caracalla 00153, Rome, Italy
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Attaluri Srinivasacharyulu	Coordinator, Asia-Pacific Agricultural Research Information System (APARIS), Asia-Pacific Association of Agricultural Research Institutions (APAARI), FAO Regional Office for Asia and the Pacific, Maliwan Mansion, 39 Phra Atit Road, Bangkok 10200, Thailand
Dady Demby	Forum for Agricultural Research in Africa (FARA), PMB CT 173, Cantonments, Accra, Ghana
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Govindan Venkataramani	
Hamed Al-Dhuhli	AARINENA-ICT RAIS SC Member, Sultanate of Oman
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Krishna Prasad Paudyal	Senior Scientist and the Chief, Communication, Publication and Documentation Division, Nepal Agricultural Research Council (NARC), Khumaltar, Kathmandu, NEPAL
Luz Fimalino	Director of Management Information Services Division (MISD), Philippine Council for Agriculture, Forestry and Natural Resources Research and Development (PCARRD), Los Banos, Laguna 4030, Manila, Philippines
Mahinda Sakalasooriya	Research Officer, Sri Lanka Council for Agricultural Research Policy, (CARP), 114/9, Wijerama Mawatha, Colombo 07, Sri Lanka
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Stephen Rudgard	FAO, Viale delle Terme Di Caracalla 00153, Rome, Italy
Thyagaraj DC	
Tran Manh Cuiong	Department of Science and International Cooperation, Vietnam Academy of Agricultural Sciences, Thanh Tri, Ha Noi, Vietnam
V. Balaji	Global Leader, Knowledge Management and Sharing, ICRISAT, Patancheru PO 502324, Andhra Pradesh, India
V. Venkatesan	ICRISAT Library
Valeria Pesce	GFAR Secretariat, C/o FAO/NRR, Viale delle Terme Di Caracalla 00153, Rome, Italy
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Annex 3

Report from the GFAR Secretariat

ICM4ARD 2007-2009: A review

1. Background

The Information and Communications Management (ICM) for Agricultural Research for Development (ARD) Global Partnership Project (GPP) was initiated in 2005 following recommendations of the 1st Inter-Regional Consultations [1] held in 2004 as a part of the Global Alliance of Regional Agricultural Information Systems (GlobAL.RAIS) project of GFAR.

A previous review compiled in 2007 gives an overview of the ICM4ARD activities for the period 2005-2007.

This review documents the progress of such activities from 2007 to date, with particular focus on the priorities identified during the 4th Inter-Regional Consultation for the ICM4ARD GPP held in September 2007 in Rome and the ICM-related activities detailed in the Programmes of Work (PoW) 2007-2008 and 2009-2010.

The 2007 ICM4ARD meeting recommended the following interventions:

- The need to lobby for this GPP in order to secure funding enabling the various RFs to strengthen their RAIS and the EGFAR platform to play its role of ARD Web ring.
- With regard to Advocacy for ICM4ARD, it was recognized that in addition to ICM policy development at global, regional and national levels as was also being promoted through the IISAST initiative, individual institutions need a clear policy framework on how the outcomes of research and development activities are communicated to stakeholders and beneficiaries. GFAR should work with FAO and CGIAR in the context of the IISAST Task Forces in developing this framework as a tool for further advocacy and support to NARS.
- Monitoring and evaluation of ICM4ARD activities needs urgent attention, as had been identified in the 2nd IISAST Consultation. Several alternatives were discussed, including impact assessment through outcome mapping. This methodology traces the impact at various levels, starting from ICM4ARD GPP to regional fora to NARS and finally in the form of livelihood improvement at grassroots level. It was also suggested that better documentation of work plans of RAIS, EGFAR and other ICM4ARD activities could assist in monitoring and evaluation process. To further strengthen the monitoring and evaluation process for ICM, an external evaluation of ICM4ARD GPP was recommended along similar lines as was done for overall GFAR activities.
- ICM4ARD needed a shift in its focus from ARD to a larger agricultural innovation framework. A concept note on this should be developed after reviewing similar efforts made by DFID (Research Into Use project), CTA and FORAGRO.

At the same time, the ICM activities foreseen in the recent GFAR PoWs are:

PoW 2007-1008

1. EGFAR

(this part will be dealt with in more detail in the EGFAR review 2007-2009)

- i) The GFAR Communication Strategy will be used to further GFAR's strategic goals in ARD through a wide range of publications;
- ii) The newly reengineered EGFAR Web space will be tested through use by stakeholders. Stakeholders will be encouraged to participate in the EGFAR Web space and be a part of EGFAR Web ring.
- iii) The technology generated in integrating the NARS-FAO-WAICENT database will be shared with regional forums, NARS information systems and other stakeholder groups in order to enhance cohesiveness and integration of ARD related databases available across the world.
- iv) The GFAR Electronic Repository will be continuously updated during the year with GFAR documents
- v) GFAR Newsletter will be published regularly electronically and in print.

2. Further strengthening of the RAIS

- i) AARINENA: Strengthening of National Information Nodal Points/Cells
- ii) APAARI: Study Tour of NARS Leaders and senior managers to Rural Development Agency, South Korea as a part of sensitization and awareness building of Senior NARS leaders and policy makers of Asian countries under the advocacy pillar of the ICM4ARD GPP.

3. Development of Proposal on enabling access to knowledge to small farmers for Innovation and sustainable livelihoods

PoW 2009-2010

1. Creating coherence between information systems for agricultural research for development (CIARD)
 - Implementing the ARD RING
2. Strengthening regional agricultural information and learning systems.
 - Advocacy to encourage increased investment in agricultural information systems (AIS) by governments and institutions;
 - To improve access to information and the ability of stakeholders to contribute to global agricultural knowledge;
 - To facilitate synergies by linking regional information conduits to global providers of agricultural information; and
 - To develop regional platforms for agricultural information and learning systems.
 - To develop national capacities in effective information and knowledge sharing and exchange for agricultural research for development
3. Sharing knowledge through the use of internet based tools and fostering debate on key issues on sharing and exchanging agricultural information and knowledge globally

4. Enabling 'Blended' learning by linking ICTs to community learning processes for agricultural development.

2. Assessment of the ICM4ARD program

Annex 1 details the achievements of the ICM4ARD GPP from 2007 to date and planned activities for the near future.

Summary

Summarizing the progress of the ICM4ARD program under the main headings identified in the PoW 2009-2010 and according to the main recommendations made by the 2007 ICM4ARD meeting, here is an assessment of the achievements and weaknesses of the ICM4ARD project in the years 2008 and 2009.

Creating coherence between information systems for agricultural research for development

This objective has been persecuted by joining forces with other International partners and co-founding, shaping and promoting the Coherence in Information for Agricultural Research for Development (CIARD) initiative, started in 2008 and now actively promoted and welcoming new members.

The ICM4ARD activities of GFAR contribute to achieving the objectives of CIARD and are aligned with the CIARD principles.

Some of the objectives of CIARD are already shaping the ICM4ARD activities in GFAR:

- advocacy policies and activities regarding coherence and improving access to information are conducted in coordination with other International and regional organizations, avoiding duplication of efforts, incoherent approaches and competition;
- technical approaches to improving coherence in information management and access to information are studied and experimented in collaboration with partners under the CIARD umbrella, especially in the CIARD Content Management Task Force (CMTF). In particular, strict collaboration with FAO is in place in all activities and projects that relate to technical approaches and technical solutions in information management. A few outputs of this collaboration are: a) a number of Application Profiles for describing organizations, events and projects; b) shared experiences in the evaluation, selection and customization of tools for better information management; c) global information services like AgriFeeds and the CIARD RING (see below).

The main achievements of the CIARD initiative itself have been: a) raising awareness of the CIARD objectives and agenda in regional workshops co-organized by FAO, GFAR, CGIAR and IAALD with the essential contribution of the each Regional Forum in its region; b) obtaining the endorsement of the CIARD Manifesto; c) producing a CIARD Checklist and an initial set of Pathways as practical guidelines and indications of good practices for coherent information management and improved accessibility and sharing of information; d) implementing the CIARD RING as a framework

The main contribution from GFAR through the ICM4ARD program has been the implementation of the CIARD RING. The idea of a Global ARD RING, earlier discussed under the ICM4ARD project, is now endorsed by the CIARD initiative as the "CIARD

RING” (Routemap to Information Gateways and Nodes). This Routemap consists of a registry of existing information services in ARD, indexed and described in a way that makes them more easily “exploitable” for building value-added integrated services.

The CIARD RING, maintained by GFAR, was launched in October 2009 and is available at: www.ciardring.net.

More technical details on the RING are provided in the EGFAR review.

Strengthening regional agricultural information and learning systems

Several regional workshops have been co-organized and supported by GFAR through its ICM4ARD program throughout 2008 and 2009. The objective of these workshops was to discuss the progress of the Regional Agricultural Information Systems (RAIS) and National Agricultural Information Systems (NAIS) in the various regions and to raise awareness between senior NARS leaders and policy makers in the regions. In some cases, the workshops were also the occasion for capacity development related to NAIS.

There are still differences in the progress of RAIS and NAIS in the various regions. Reports from the regions will be attached to this ICM4ARD review.

One of the objectives of the ICM4ARD program, the development of distributed databases on Institutions, Experts, Projects and Project outputs, has not been achieved yet and little progress has been made. This has been due mostly to lack of resources, lack of a coherent approach between NAIS and RAIS and lack of good tools for effectively managing information and sharing it with other NAIS and RAIS. Two good tools have been developed in the WANA region but their adoption in the NAIS has been held back by either technical issues (proprietary programming language and development platform, complex installation) or Institutional issues (lack of awareness and resources, legacy problems).

Some weaknesses in the APAARI, AARINENA and CACAARI websites and information systems, in terms of communication tools and flexibility of information management, were noticed on the occasion of the organization of the electronic consultations for GCARD 2010. In order to improve the systems, stronger collaboration is planned between the GFAR Secretariat and the above mentioned RAIS.

In particular, the CACAARI.RAIS website has been reorganized and a new “engine” for the website is now being implemented with support from GFAR-Secretariat.

All the weaknesses noted above relate partly to the lack of coherent approach and to the lack of suitable tools. Regarding tools and technological approaches, the GFAR Secretariat’s role is an advisory role, consisting especially of recommending suitable tools (and providing training if necessary) and best practices, always in line with the approaches recommended by the CIARD CMTF.

In general, the main difficulties in implementing efficient RAIS and NAIS are: a) lack of investment and subsequent lack of human resources; b) lack of coherent approaches and poor alignment with the approaches discussed within and promoted by the CIARD initiative, with subsequent duplication of similar efforts and little sharing of information; c) little awareness at the level of policy makers.

The advisory role of GFAR in this area has been also played through the publication of documents: in 2008 GFAR drafted and circulated for comments a document on “Advocacy by Regional Forums for Improving Information Sharing and Exchange in Agricultural Research for Development” and in 2009 GFAR circulated an information sheet for GFAR stakeholders with guidelines on “Inter-regional and global sharing of information. GFAR and

CIARD services, projects and facilities that can support inter-regional and global sharing of information”.

Sharing knowledge through the use of internet based tools and fostering debate

Many of the activities under this action point were carried out through EGFAR and are better detailed in the EGFAR review.

Summarizing the EGFAR activities:

- GFAR introduced the use of web 2.0 tools and social media for information management and sharing (del.icio.us, Google Calendar, Google Earth, Flickr, YouTube) and for awareness raising (Wikipedia) and added new web 2.0 functionalities to EGFAR.
- A new section was created in EGFAR to support the GCARD process and especially the regional e-consultations (providing discussion forums, an overview of each regional consultation with updates from the blog and from the forums, links to the registration pages for each region for participating in the electronic discussions and documents produced for the regional consultations) and IT support was provided by the GFAR Secretariat for the email-based e-consultations.

In the area of sharing knowledge, GFAR also participated in important events where its experiences could be shared. At the Knowledge Share Fair (January 2009) GFAR Staff contributed through seminars and discussions on website functionalities for knowledge sharing, relating the experiences with EGFAR and other tools. At the 7th World Congress of Computers in Agriculture (June 2009) Ajit Maru presented a paper describing GFAR’s experiences in fostering and supporting the development of agricultural research information systems at national, regional and global levels, illustrating the evolution of the overall approach, the initiatives of the various stakeholders and the experiences with different technologies.

Linking ICTs to community learning processes for agricultural development

The focus regarding ICTs in the ICM4ARD program in the past was mostly on ICTs for: a) managing and disseminating information to support research management; b) facilitating communication; c) supporting extension agents. In the latest two years, concepts are shifting to incorporate learning processes. The “Knowledge for All” pillar of GFAR emphasizes the importance of learning and education.

Within the ICM4ARD program, the FARA Regional Agricultural Information and Learning System (RAILS) has a special focus on learning, especially South-South learning.

ICM4ARD has contributed to important events and initiatives in this area, especially co-organizing the Workshop on Education Reform for Agricultural Research held in Maputo in December 2008 and supporting the processes of the Commonwealth of Learning to establish open learning processes in the Caribbean. GFAR has also participated in the e-conference of the Agricultural Learning Repositories Task Force (AgLR TF).

In addition, two important events co-organized by GFAR on the theme of ICTs also included discussions on ICTs for learning processes: the Workshop and Sessions on "Adoption of ICT Enabled Information Systems for Agricultural Development and Rural Viability" held at the World Conference on Agricultural Information and IT (AFITA-IAALD-WCCA) in Atsugi, Japan in July 2008 and the Workshop on “ICTs transforming Agricultural

Science, Research and Technology Generation” held at the Science Forum in Wageningen in June 2009, which discussed some of the trends and changes that are expected in the agricultural science, research and technology that will be influenced by ICTs in the coming years.

Lobbying for ICM4ARD

Getting donor attention for investment in the ICM4ARD program has been an area of weakness, although some actions were undertaken in order to better advocate investment in ARD in general:

- Participation in the ASTI Workshop held in Entebbe in January 2009 was motivated by the fact that agricultural science and technology investment and capacity related data and indicators contribute the evidence necessary to advocate investment in ARD.
- In order to support the Regional Forums in advocating the importance of ICM and the need for better investment, in 2008 GFAR circulated a document on “Advocacy by Regional Forums for Improving Information Sharing and Exchange in Agricultural Research for Development”
- In 2008 Peter Ballantyne wrote a paper for GFAR under the title “Investing in Agricultural Development. Information, Knowledge and Communication the ‘Fertilizers’ of Future Research Harvests”

Supporting individual institutional policy frameworks

This action point was clearly identified as something that should be carried out in collaboration with FAO and CGIAR and in the context of the former IISAST initiative and in fact this has been acknowledged as an essential role for CIARD.

The CIARD Manifesto states: “We will integrate interventions at policy, institutional and individual levels to develop awareness, understanding and skills”.

At a more practical level, the CIARD Checklist features a whole section on “Developing Institutional Readiness”, which recommends the following actions as steps to develop a good institutional policy framework:

- Gain support for the CIARD Manifesto and Values from management and scientists in your institution, making use of CIARD’s guidelines and tools to present the case for change and to identify the benefits.
- Have your institution recognised as a CIARD partner through (a) linking from your web site to the CIARD site, (b) registration of your collection/repository in the CIARD RING.
- Adopt a formal institutional strategy to ensure the enhancement and long term sustainability of its digital information content and systems, and to ensure the quality of its content.
- Develop the capacities of your institution to achieve the CIARD Principles – in terms of policies, commitments, institutional structures, individual skills and technology infrastructure.
- Develop national/local partner networks of institutions to share resources and skills related to achieving the CIARD Manifesto.

Monitoring and evaluation of ICM4ARD activities

This has been an area of weakness as regards a formal evaluation of the ICM4ARD program, especially of the outcome and impact of investments made in terms of effort, time and money, and the identification of measurement criteria.

However, progress in ICM4ARD and EGFAR has been indirectly monitored through a special issue of the Agricultural Information Worldwide journal on “Developing Agricultural Research Information Systems: Experiences of the Global and Regional Forums”, published at the end of October 2009. This special issue was prepared by the GFAR Secretariat and by the Regional Forums and, beside describing general issues in the development of information systems, it documents the progress and status of EGFAR and the RAIS.

Progress in the ICM4ARD program has also been monitored in the preparation of this ICM4ARD review for the 5th inter-regional ICM4ARD meeting in Hyderabad, December 2009.

Shifting of focus from ARD to a larger agricultural innovation framework

GFAR has been advocating for this over the last two years, especially in the context of CIARD. In fact, the focus in CIARD has broadened to include innovation.

The subject of innovation has also been tackled by Peter Ballantyne in his paper written for GFAR [6] on “Investing in Agricultural Development. Information, Knowledge and Communication the ‘Fertilizers’ of Future Research Harvests”

Report of activities

1. Creating coherence between information systems for agricultural research for development

The Coherence in Information for Agricultural Research for Development (CIARD) initiative

- Participation in the meetings of the CIARD Core Group to represent GFAR’s views (January 2008, January 2009)
- Participation in the CIARD sessions held at regional meetings (Cairo, Lima, Hyderabad) in order to raise awareness and get the participants’ endorsement of the CIARD agenda
- Collaboration in the elaboration of the CIARD Pathways:
 - CIARD Writeshop at Bioversity in May 2009;
 - 2009: contribution to the Pathway on how to “Publish and promote outputs with newsfeeds”, (Valeria Pesce, GFAR and John Ferreira, Mann Library, Cornell University);
 - A first set of Pathways was published in October 2009 on the CIARD website.
- Collaboration in the maintenance of the CIARD website at www.ciard.net
- CIARD RING.
 - Presentation of the Web Ring concept at the World Conference on Agricultural Information and IT (AFITA-IAALD-WCCA), Atsugi, Japan, July 2008
 - Implementation of the RING
The “CIARD RING” (Routemap to Information Gateways and Nodes) is maintained by GFAR and was launched in October 2009. It is available at: www.ciardring.net.
More technical details on the RING are provided in the EGFAR review.

Collaboration with FAO

In 2008 and 2009 GFAR and FAO have closely co-operated in specific projects and areas related to information management, following the principle that duplication of efforts at the global level should be avoided.

- GFAR participated in the establishment of metadata sets for exchanging information on organizations, events and projects together with FAO, Wageningen Int. and GFIS and subsequently adopted these standards;
- GFAR, FAO and partner Institutes in India and Kenya are evaluating and customizing content management tools that allow the integration of standards and custom vocabularies;
- GFAR contributed to the launch and promotion of AgriFeeds, a web service facilitated by FAO for sharing information on news and events in agriculture; and FAO is contributing resources for the RING.

2. Strengthening regional agricultural information and learning systems

Participation in RAIS workshops

- 2008: AARINENA Regional Agricultural Information System meeting, Oman, January 2008;
- 2008: APAARI Technical Workshop on Development and De-Centralized Management of ARD Information Resources; Ajit Maru of GFAR also co-chaired the APARIS Steering Committee Meeting, Bangkok, April 2008;
- 2008: FARA-RAILS Task Force Meeting and the FARA-Secretariat Communication Strategy Workshop in Accra, February 2008
- 2009: Regional Training Workshop on "Building National Capacities in Information and Knowledge in Support of Agricultural Research for Development in Near East Region" organized by AARINENA, FAO, GFAR and ICARDA in Cairo, May 2009
- 2009: Regional Workshop on Enabling the Agricultural Innovation System for Agricultural Development in Central Asia
- 2009: International Workshop on ICM for Agricultural Research and Innovation in Hyderabad, Dec. 2009

Support to the RAIS

- 2008: GFAR drafted and circulated for comments a document on "Advocacy by Regional Forums for Improving Information Sharing and Exchange in Agricultural Research for Development"
- 2008: RAILS large scale programme highlighted as having developed out of GFAR support to FARA
- 2009: GFAR offered technical support for strengthening the APAARI, AARINENA and CACAARI Regional Agricultural Information Systems.
The GFAR Secretariat's role has been and will be an advisory role, consisting especially of recommending suitable tools (and providing training if necessary) and best practices. (See above "Collaboration with FAO": GFAR, FAO and partner Institutes in India and Kenya are evaluating and customizing content management

tools that allow the integration of standards and custom vocabularies).
More information on this is provided in the EGFAR review.

- 2009: GFAR circulated an information sheet for GFAR stakeholders with guidelines on “Inter-regional and global sharing of information. GFAR and CIARD services, projects and facilities that can support inter-regional and global sharing of information”

3. Sharing knowledge through the use of internet based tools and fostering debate

EGFAR

(these activities are better documented in the EGFAR review)

- 2008: GFAR introduced use of web 2.0 tools and social media for information management and sharing (del.icio.us, Google Calendar, Google Earth, Flickr, YouTube) and for awareness raising (Wikipedia).
- 2008: New web 2.0 functionalities were added to EGFAR (this is described in more detail in the EGFAR review)
- 2008: Improvements in news management and dissemination.
- 2009: New website section for GCARD 2010.
In particular, a special section was created in the GCARD website to support the regional e-consultations, providing an overview of each regional consultation with updates from the blog and from the forums when available, links to the registration pages for each region for participating in the electronic discussions and documents produced for the regional consultations.
- 2009: IT support for the GCARD e-consultations.

Tools and Technologies

- 2008: GFAR evaluated and began a pilot service with the SIST platform (sponsored by CIRAD and MAE, France and used in many African countries);
- 2009: evaluation and customization of content management tools in collaboration with FAO.

Participation in events

- Knowledge Share Fair, January 2009
GFAR Staff not only participated in the Share Fair, but also contributed through seminars and discussing website functionality for knowledge sharing. During a session entitled “Knowledge Gateways”, Valeria Pesce and Mark Holderness made a presentation on the GFAR’s web space.
In an interview conducted by Paul Van Mele of the Africa Rice Center (WARDA) during the Share Fair, Dr Holderness spoke on the importance of searching out the many media and methods by which knowledge can be shared amongst rural communities and research institutions.
- 7th World Congress of Computers in Agriculture, June 2009
Ajit Maru participated in the 7th World Congress of Computers in Agriculture and Natural Resources (WCCA 2009), held in Reno, Nevada, from June 22nd to June 24th 2009. Dr. Maru presented a paper describing GFAR’s experiences in fostering and supporting the development agricultural research information systems at national, regional and global levels, illustrating the evolution of the overall approach, the

initiatives of the various stakeholders and the experiences with different technologies. Ajit Maru also chaired a session on “Precision Agriculture & Wireless Sensor Networks”.

4. Linking ICTs to community learning processes for agricultural development

Facilitation and initiatives

- 2008: Ajit Maru has provided facilitation support to processes of the Commonwealth of Learning to establish open learning processes in the Caribbean
- 2008: GFAR joined the Agricultural Learning Repositories Task Force (AgLR TF) together with FAO and other key partners; Ajit Maru and Valeria Pesce participated in the AgLR e-Conference
- 2008: Scope for S-S learning and RAIS capacity building from RAILS

Organized events

- 2008: Workshop and Sessions on "Adoption of ICT Enabled Information Systems for Agricultural Development and Rural Viability" at the World Conference on Agricultural Information and IT (AFITA-IAALD-WCCA), Atsugi, Japan, July 2008
The final report [7] gives a complete account of the discussions and draws some conclusions.
- 2009: Workshop on ICTs at the Science Forum, June 2009
GFAR collaborated with Wageningen University and CGIAR Science Council to organize the Science Forum 2009. At the Science Forum, GFAR was tasked with organizing a Workshop on ICTs transforming Agricultural Science, Research and Technology Generation.

Participation in events

- Pan-Commonwealth of Learning Forum, London, July 2008
- Workshop on Education Reform for Agricultural Research in Maputo, December 2008

5. Lobbying for ICM4ARD

Production of documents

- 2008: GFAR circulated a document on “Advocacy by Regional Forums for Improving Information Sharing and Exchange in Agricultural Research for Development”
- 2008: Peter Ballantyne’s paper for GFAR: “Investing in Agricultural Development. Information, Knowledge and Communication the ‘Fertilizers’ of Future Research Harvests”

Participation in events

- ASTI Workshop, January 2009
Ajit Maru represented GFAR at the Agricultural Science and Technology Indicators

Workshop from 21 – 21 January 2009 in Entebbe and participated by presenting the GFAR perspective on science and technology indicators.

6. Supporting institutional policy frameworks

This has been acknowledged as an essential role of CIARD and is reiterated in the Manifesto (“We will integrate interventions at policy, institutional and individual levels to develop awareness, understanding and skills”) and in the first section of the Checklist (“Developing Institutional Readiness”)

7. Monitoring and evaluation of ICM4ARD activities

- *Better documentation of work plans of RAIS, EGFAR and other ICM4ARD activities*
- *External evaluation proposed*

- 2009: IAALD special issue documenting the progress and status of EGFAR and the RAIS.
- A special issue of the Agricultural Information Worldwide journal on “Developing Agricultural Research Information Systems: Experiences of the Global and Regional Forums” was published at the end of October 2009.
- 2009: ICM4ARD and EGFAR reviews for the 5th inter-regional ICM4ARD meeting and the EGFAR Task Force in Hyderabad, December 2009

8. Shifting of focus from ARD to a larger agricultural innovation framework

- 2008: Peter Ballantyne’s paper for GFAR [6]: “Investing in Agricultural Development. Information, Knowledge and Communication the ‘Fertilizers’ of Future Research Harvests”
- 2009: CIARD focus broadened to include innovation

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Annex 4
Report from AARINENA

**AARINENA ICT-RAIS Main actions and
achievements**

Period 2007-2009

By
Sallam Mohammed
Mohsen KRICHI
members of the ICT-RAIS Steering Committee

Table of contents

1- Introduction

2- Main achievement

- Establishment of information focal units
- Capacity building activities
- Strengthening ICT-RAIS information systems
- ICT/M information strategies/policies
- Advocacy and collaborative issues

3- Main constraints

4- Suggested improvements

1- Introduction

The work of the ICT-RAIS steering committee during the past three years was guided by its TORs and the main themes prepared and approved in the first year (2006). The main focus of the ICT-RAIS SC terms of reference was in facilitating collaborative programs reflected into its three years work plan, facilitating communication between all concerned stakeholders, monitor and evaluate the implementation of its work plan, and reporting to the AARINENA Executive Committee. The main themes of the three years work plan were as follows:

- Identifying focal units in member states
- Capacity building activities
- Consolidating the preparation of ICT national strategies and policies
- Strengthening AARINENA ICT-RAIS information systems (suite of tools)
- Advocacy and collaborative issues

This report intends to highlight the most important issues of progress made during the period 2007-2009. It focuses on the main themes of the ICT-RAIS work plan, with some important constraints that have affected its progress, and the important suggestions for further improvement.

2- Main achievements :

2.1- Establishing information focal units

In this regard, the first step was the preparation of NIFUs terms of reference after consultation of various references and experts from other regions. The prepared and approved NIFUs terms of reference are shown as follows:

- To assist in the identification of respective NARS information needs
- To assist in the in the development of NAIS and RAIS in AARINENA member countries.
- To collect, organize, monitor and update information and make them accessible to AARINENA-RAIS.
- To assist in the improvement of national research and ICT policies and strategies within the scope of AARINENA-RAIS mission.
- To share skills, knowledge and experiences in the handling and management of information among national focal units.
- To represent the respective NARS in the AARINENA General Assembly meetings and relevant ICT/M national and regional events.

After the approval of the above TORs, an intensive follow up was made by AARINENA. A main letter with justifications of establishing focal units was prepared and sent to all NARS leaders in AARINENA member countries. An intensive follow up using emails and personal contacts was made to accelerate the formation of NIFUs.

A forum discussion was later established to discuss the different possibilities of strengthening the role of focal units in the development of NAIS and RAIS.

2.2- Capacity building activities

Although all the proposed capacity building activities were not fully implemented, important achievements were made in this respect. Concept notes for strengthening NAIS and RAIS through the development of focal units' capacity building were prepared and submitted to FAO and GFAR for required support.

Three main important capacity building activities were funded by FAO and GFAR and implemented in coordination with FAO regional office in Cairo and ARC-Oman.

The first one was a training workshop on strengthening information systems for agricultural research and development held in Cairo in 2007.

The second was a training workshop on establishing successful information units and identifying countries priorities in the development of NAIS and RAIS held in Oman- Muscat.

The third one was a Regional Training Workshop "Building National Capacities in Information and Knowledge In Support of Agricultural Research for Development in Near East Region", held in 2009 in Cairo, Egypt. This workshop continued to build the capacity of participants representing NIFUs in Near East and North Africa region in the following:

- Awareness of strategic aspects of information and knowledge in the context of development of their NAIS, the Regional Agricultural Information System (RAIS), and the Global CIARD Initiative;
- Awareness of the potential for improving linkages and sharing information and knowledge between researchers and other stakeholders using ICM tools;
- Ability to identify priorities for early implementation in support of the development of their NAIS;
- Understanding and skills in the application of information management systems and tools, featuring NERAKIN, to facilitate development of NAIS, including identification of changes to adapt it to the needs of participating countries.

It is worth mentioning that all different E-learning tools were enhanced and utilized throughout the past three years. Correspondence and coordination was also made with various donor agencies, such as ICARDA, FAO, GFAR, and Bioversity for seeking training and capacity building support.

2.3- Strengthening ICT-RAIS information systems

This activity includes efforts made to develop AARINENA website and the introduction of suite of tools/portals for strengthening the agricultural information systems and information exchange in the region and internationally.

The new version of AARINENA website released in June 2009. The new website consists of new features ; users and sub-regional focal points can interact directly on the website using the following features:

- Member area
- Electronic archive
- AARINENA RSS
- Regional Researchers database
- Regional Institutional database
- Discussion forum
- KS tools(Blogs, Wikis,...)

Other activities in this regard were:

- The introduction and development of National Agricultural Research Information Management System (NARIMS) as a Web based bi-lingual information system aimed at capturing and disseminating information about research institutions, researchers, Publications, and projects.
- The introduction and development of the Near East Rural and Agricultural Knowledge and Information Network (NERAKIN: www.nerakin.net) as a platform for knowledge sharing and collaboration for Agricultural Research and Development (ARD) for target groups and stakeholders at a regional level.

2.4- ICT/M information strategies/policies

Some preparation and coordination activities in this direction were as follows:

- Identifying the NAIS status within member countries during the Oman workshop.
- Development of SWOT analysis presented in Oman workshop.

- Development of options for further strategic action in Oman workshop.
- Initiatives/ preparation for the development of ICT/M strategies with support from FAO in the establishment of successful information systems/strategies in some countries, such as Jordan and Oman.

2.5- Advocacy and collaborative activities

- Advocating/coordinating ICT/M within various AARINENA, GFAR, and FAO expert consultation meetings/conferences (Rome, 2007, Damascus, 2008)
- Establishing inter-regional collaboration with APAARI
- Establishing inter-regional collaboration with FARA
- Participating and membership in task forces (New AGRIS Advocacy, EGFAR) and Inter-regional consultation on ICM4ARD (Rome 2007).
- Coordinating competitive posters and success stories selection and publication
- Interacting, collaborating and sharing information in (discussion forums, Web2 for Dev. Discussions, CIARD initiative, etc...)
- Interactive discussions for collaboration with international organizations (ICARDA, Bioversity International, etc.)

3- Main constraints:

- Poor or Slow reaction by some NARS in member countries in establishing NIFUs and other ICT/M activities
- Slow responsiveness and communication within and between sub-regional ICT-RAIS information units
- Lack of financial support for activities at sub-regional level
- Lack of support from some NARS leaders (institutional and financial) for enhancing the role of national focal units
- Shortage of funds to implement all the prepared ICT-RAIS work plan, except the efforts and arrangements made to maintain some activities.

4- Suggested improvements:

- Give more attention to intensive capacity building to strengthen NAIS, RAIS, and foster ICT development.
- Encourage active collaboration between Focal Units to exchange and share experiences and knowledge.
- Develop and support active inter-regional collaborative programs, communication channels and linkage mechanisms
- Support and facilitate the development of ICT training manuals, source books, and training materials in Arabic language.
- Search for ways of enhancing and encouraging NARS leaders support for ICT/M activities at national and regional levels
- Encourage the creation of strong cooperation with local, regional and international agencies and institutes dealing with ICT sector.
- Encourage the establishment of common standards and methods for data collection, storage and dissemination mechanisms related to agricultural R&D.
- Increase cooperation in E-publications and learning from success stories
- Secure financial support for ICT/M related activities at sub-regional levels

Annex 5

Report from APAARI



Asia-Pacific Association of Agricultural Research Institutions

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A brief report on the Asia-Pacific Agricultural Research Information System (APARIS)

Introduction

Realizing the importance of information and knowledge management in agricultural research for development, APAARI has established the *Asia-Pacific Agricultural Research Information System (APARIS)* in 1999 with an aim to serve as a regional de-centralized platform for efficient information and knowledge sharing among the National Agricultural Research Systems (NARS) in the Asia and the Pacific region. The Australian Centre on International Agricultural Research (ACIAR) and the Global Forum on Agricultural Research (GFAR) have been supporting the APARIS programme. The objectives of APARIS are:

- To serve as regional platform for efficient information and knowledge sharing among National Agricultural Research Systems (NARS) in the Asia and the Pacific region
- To strengthen agricultural information systems in Asia and the Pacific region through advocacy, capacity building and training for agricultural information professionals of National Agricultural Research Information Systems (NAIS)
- To promote the use of new Information and Communication Technologies (ICTs) for better Information Communication Management (ICM) in Agricultural Research for Development (AR4D) in Asia and the Pacific region
- To act as regional node linking National Agricultural Research Information System (NAIS) to other Regional Agricultural Information Systems (RAIS) and global agricultural information systems.

APAARI recognizes that the success of APARIS will depend largely on involvement of national agricultural research systems in the region. Therefore, a bottom-up approach has been adopted in developing APARIS. In this regional knowledge network, NARS are represented by their respective National Agricultural Information Systems (NAIS) designated as National Information Nodal Points (NINPs). APARIS also acts as a regional node linking NAIS to global (such as WAICENT, AGRIS, WISARD, ASTI, AROW, etc.) and other regional agricultural information systems (RAIS) such as InfoSys+, AARINENA-RAIS, Agroweb-CAC, FORAGRO-RAIS and FARA-RAIS.

Organisational Structure

APARIS is an important programme of APAARI. It is governed by a Steering Committee comprising of experts in agricultural research, extension and information management representing national agricultural research systems, GFAR, FAO, APAARI and special

invitees from reputed organizations dealing with information and communication technologies and agricultural information management. The Steering Committee meets every year and provides necessary guidance and approves the activities for APARIS. The composition of Eight Steering Committee of APARIS is as follows:

Chairman	Dr Simon Hearn, Dr. Simon Hearn, Senior Advisor, Australian Centre for International Agricultural Research (ACIAR)
Co-Chair	Dr Ajit Maru, GFAR
Members	Dr Abd Shukor bin Abd Rahman, Director-General, Malaysian Agricultural Research and Development Institute (MARDI) & Chairman, APAARI
	Dr Raj Paroda, Executive Secretary, APAARI
	Dr Bharatendu Mishra, Executive Director, Nepal Agricultural Research Council (NARC)
	Dr Malcolm Hazelman, Senior Extension, Education and Communications Officer, Natural Resources Management and Environment Group (RAPS), FAO RAP
	Dr Patricio Faylon, PCARRD
Member Secretary	Dr Attaluri Srinivasacharyulu, APARIS Coordinator

Progress

A brief account of APARIS development phases and progress since its establishment in 1999 is given below:

APARIS Phase I (1999-2001)

In phase-I, establishment of APARIS, assessment of NARS needs, design and development of web-based information system, building databases on research networks etc. were undertaken. Details of activities undertaken are given below:

1. Establishment of *Asia-Pacific Agricultural Research Information System (APARIS)* in 1999 as an important programme of APAARI.
2. First ICT Expert Consultation on development of APARIS held in November, 2000.
3. APAARI website <http://www.apaari.org/> was set up to provide access to information on several in-house activities and internet information resources for APAARI stakeholders and ARD professionals. The website was developed with more than 300 linkages to various national, regional and international institutions, networks and other relevant organisations.
4. Regional Research Networks (RRNs) Database has been developed and made available on APAARI website. This database provides access to major regional research networks, and it continues to develop in order to cover all the networks that effectively operate at both the regional and the sub-regional levels (i.e., South Asia, South-East Asia and the Pacific). Some examples of RRNs included in this database are NACA, APAFRI, INGER, COGENT, the Regional Network on Plant Genetic Resources, CLAN, CORRA, the Rice-Wheat Consortium and others. This database also provides access to the websites of the

RRNs, and to the information resources that these networks offer such as the NARS Database; Regional Associations Database; ARD Projects Database; Daily Agriculture News; Database on Agricultural Research and Development Indicators. APARIS also provides access to ASTI (Agricultural Science and Technology Indicators) project of IFPRI.

5. Information on regional events related to ARD provides two databases, namely, meetings and events related to ARD and ICM; this database also covers APAARI activities and events, and provides general information on scientific and technological events that are being organized by stakeholders in the region, and ICM training activities in the region.
6. Access to scientific publications and e-journals publications generated by agricultural research in the region was provided besides access to all APAARI publications; expert consultations, success stories and other publications.
7. Access to electronic forums to facilitate dialogue among stakeholders of ARD in the region on issues of strategic importance has been provided. These included access to Electronic Forum on Information and Training Requirements in the Asia-Pacific region; Access to the EGFAR-NARS Forum; Specialized Thematic Electronic Forums.
8. Access to Gateway/Portal Services provided through APARIS including portal to Regional Research Networks (RRNs) to facilitate access to the websites of the information resources available in the research networks that operate in the region; websites of NARS Institutions in the Asia-Pacific region; Web-enabled information on key topics/themes of ARD and access to knowledge networks of research organizations (NACA, APAFRI, INGER, Rice-Wheat Consortium, etc and pilot project on the Development of Knowledge Networks in specific areas of ARD.

APARIS Phase II (2002-2006)

During phase-II, APARIS Steering Committee was constituted and terms of reference for the National Information Nodal Points (NINPs) were identified. Subsequently, programmes on the advocacy for fostering use of ICM/ICT for AR4D, capacity building on ICM/ICT for NARS and integration of agricultural information resources in the Asia and the Pacific region have been undertaken. Details of activities undertaken are given below:

1. *Second ICT Expert Consultation* on further development of APARIS in October, 2002
2. *Formation of APARIS Steering Committee*: An APARIS steering committee was formed in 2002 to provide policy support, undertake strategic planning, provide overall technical guidance, source external funds, and monitor the progress of APARIS work plan.
3. *Identification of National Information Nodal Points (NINPs)*: The Steering Committee in its first meeting in October 2002 reviewed and accepted the terms of reference (ToR) for NINPs which were developed during the expert consultation. The ToR of NINPs are as follows:
 - Assess the status and needs of respective NARS with regard to ICT in ARD
 - Monitor and update information to improve relevance and effectiveness of APARIS contributions to APAARI vision and mission

- Identify, collect, organize and make accessible information systems within the subject scope of APARIS
 - Establish and operate information services for national and regional clientele based on APARIS processed information
 - Share skills, knowledge and experiences in handling and management of information among NINPs.
4. *Developing Regional and International Collaboration / Identifying Support Group*: As a follow-up of the recommendations of the second ICT expert consultation, in April 2003 APAARI organized a meeting to formalize the bilateral cooperation between APAARI and the members of its support group in the area of ICT (FAO, GFAR, ISNAR and AIT). This exercise resulted in identification of specific areas of collaborative activities that synergize the resources of support group members and APAARI.
 5. *Third ICT Expert Consultation in December 2003*: The third expert consultation assessed the progress made by various NARS in the areas of ICM; explored the opportunities for enhancing the role of ICM in ARD; and discussed potential improvements in APARIS by focusing on expanding its user-base to include the learning communities and their information needs.
 6. *Status Report on Information and Communication Technologies in Agricultural Research for Development in the Asia-Pacific Region*: APAARI has undertaken a survey to assess the status of ICT in AR4D in Asia and the Pacific. Data and information on ICT/ICM infrastructure, policy and strategies, content, applications and information services have been solicited from the NARS in the region. Under this, National Information Nodal Points (NINPs) of APAARI members participated in the survey and prepared a status report for their respective NARS. These reports were later analyzed with the support of data from published/internet sources and organized as per an ICT/ICM framework for assessing the status of ICT/ICM in AR4D in Asia and the Pacific region. The status report was published in 2004 and widely circulated among NARS members for improving use of ICT/ICM in AR4D in the region.
 7. *Development of Regional Agricultural Expert Locator (RAEL) and Regional Agricultural Information Gateway (RAIG)*: NINPs serve as links between APARIS and the member NARS for sharing information of general nature. RAEL was initiated with an aim to creating multiple input points (within a NARS) for APARIS for establishing database of agricultural experts and their profiles. RAIG was aimed to locate agricultural information resource by keyword; research institution by name; by acronym; by areas of specialization; by country etc. In August 2003, NINPs were requested to provide summaries and URLs of digital information resources available in their respective NARS. The gateway provides search facility to access information.
 8. *Improving and popularizing APAARI website*: The main objective of this activity is to check and update the site content, ensure validity of linkages from APAARI website, add search facilities and new relevant links at appropriate places. In order to popularize use of information on the website, 'APAARI on CD' has been developed to provide off-line access to APAARI website to those who lack adequate internet connectivity. Copies of APAARI on CD have been distributed to APAARI's diverse stakeholders. This has now become an annual publication of APAARI. Along similar lines, NARS on CD is also

published, which provides a detailed directory of NARS institutes of the region in a user friendly searchable format.

9. *Expert consultation on Strengthening Regional Agricultural Information System: Role of ICT in ARD* was held in December 2003 at the Asian Institute of Technology (AIT), Bangkok. Participants from Asia-Pacific region, representatives from regional agricultural fora of West Asia and Africa also participated. The workshop emphasized on the need of using conventional and new ICTs together for information and knowledge sharing vis-à-vis role of APARIS in improving the efficiency and effectiveness of the information and knowledge flows related to agriculture in the region with greater participation of NINPs.
10. *Training Workshop on Capacity Building for Developing National Agricultural Information Systems (NAIS)* of Cambodia, Laos, Myanmar, Bhutan, East Timor, Mongolia and Vietnam was held in August 2004 in Asian Institute of Technology (AIT), Bangkok in collaboration with GFAR, AIT, FAO, UNESCAP-CAPSA, SDLEARN and JIRCAS/NARO, to assist NARS of the above mentioned countries by training their appropriate officers in ICM and building NAIS. During the workshop, trainees were assisted in defining their respective NAIS and in developing prototype websites of their respective NARS as a delivery medium for NAIS. Training material, including video-recorded lectures on key topics, has been collected and organized in web-based and CD-based formats. This training material will be further developed as an e-Learning tool in collaboration with AAACU, SDLEARN and others for future sub-regional and national training programs under APARIS.
11. *Role of ICT in Taking Scientific Knowledge/Technologies to the End Users* was organized in January 2005 in New Delhi, India in collaboration with APAARI, Trust for Advancement of Agricultural Sciences (TAAS), India, National Academy of Agricultural Sciences (NAAS), India, and Indian Society of Agricultural Statistics (ISAS), India. This workshop recommended that there is need for access to value added information / knowledge dissemination through a well coordinated national system (stressed on establishing NAIS) so that farmers gain through ICT networking and are linked to national, regional and global markets for better value of their products in order to get higher income and come above poverty scenario. It also stressed on improving village level ICTs through promotion of rural information clinics by young entrepreneurs and capacity building of extension functionaries for the transfer of knowledge dissemination to the end users/ farmers.
12. *Training Workshop on Integrating National Agricultural Information Systems (NAIS)*: In order to build capacity for improved information exchange and communication in agricultural research in the region, a training workshop on Integrating NAIS was held at AIT, Bangkok in November 2005. The workshop recommended further development of APARIS integration tools through Regional Agricultural Expert Locators (RAEL) and Regional Agricultural Information Gateway (RAIG) and also developing some success stories on ICT.
13. *Inter-regional cooperation for ICT and ICM in ARD*: In July 2006, APAARI organized an inter-regional workshop on 'Advocacy and inter-regional cooperation for information and communication technologies / management in agricultural research for development' at AIT, Bangkok with GFAR's support. The workshop's objectives were to: (i) identify the role of Regional Fora (RF) in the emerging global alliance for ICT and ICM in ARD

through their Regional Agricultural Information Systems (RAIS); and (ii) develop collaborative activities of RAIS, such as APARIS, AARINENA-RAIS, FARA-RAIS, InfoSys+, AgroWeb, CAC-RAIS, and FORAGRO-INFOTEC. The workshop was also an opportunity for the new AGRIS Task Force on Advocacy to discuss with RFs the future direction and actions. The workshop was attended by 21 participants from various RFs, selected Asia-Pacific NARS, GFAR, FAO, and representatives from other international initiatives on ICM for ARD.

14. *Success Stories on Agricultural Information Systems*: In 2006, with the support from GFAR and ACIAR, APAARI has published a collection of success stories and best practices of ICT and ICM in ARD. In addition to a descriptive list of several current initiatives on agricultural information systems, the publication provides two different case studies—one on linking farmers with the researchers (RDA, South Korea's Agricultural Information Service) and the other on linking farmers to markets (India's e-Choupal initiative).
15. *Information services and publications: CD-ROM publications*: APARIS has been bringing out annual CD-ROM publications such as *APAARI on CD* and *NARS on CD* since 2004 targeting users in the developing countries of the region. Access to information services and publications was also provided through APAARI website.
16. During the period, APAARI has participated in other Regional Initiatives such as APAN and AFITA to promote APARIS and its outputs.

Report of activities under the ICM4ARD agenda for the period 2007-2009

Activities under APARIS have been slowed down as the position of APARIS Coordinator has been fallen vacant during most part of the period under review. A full time Coordinator has been appointed in July 2009. However, the following important activities have been undertaken during the period under review:

1. Advocacy for increased and improved investment in ICM and in sharing and exchanging ARD information

1. *Sensitization and Awareness Building Workshop for NARS Leaders and Senior Managers on Information and Communication Technologies and Management (ICT/ICM), August, 2007, PCARRD, Philippines*: Twenty two NARS leaders and senior managers representing 10 countries and 3 sub-regions of Asia-Pacific participated in the workshop. The workshop provided a good opportunity to discuss progress of various national ICT/ICM projects and share development experience of National Agricultural Information Systems (NAIS). The major recommendations of the workshop included: APARIS should continue to focus its activities on advocacy, capacity building and regional knowledge sharing through involvement of NAIS; strengthening linkages between APARIS and NAIS; adoption of new web technologies and tools for cost effective updating of agricultural research information; promotion of information resources among various stakeholders; need for objective feedback mechanism to evaluate the regional and national agricultural research information systems for their continuous development.

2. Capacity development

1. *APARIS Technical Workshop on Development and Decentralised Management of ARD Information Resources, April 2008, Bangkok*: Ten participants from National Information Nodal Points (NINPs) from Bangladesh, Nepal, India, Malaysia, Pakistan, Philippines, Papua New Guinea, Sri Lanka, and Thailand have been participated in the workshop to strengthen APARIS and its linkages with the National Agricultural Information Systems (NAIS) of the Asia-Pacific using the de-centralization approach of the Global ARD Web Ring. The workshop was facilitated by resource persons from GFAR, FAO and AIT, and APARIS Coordinator. GFAR and FAO emphasized the critical role of NAIS in this web ring as most of the agricultural knowledge is created at a research institute level. ACIAR advocated that greater adoption of agricultural R&D by farmers is possible if improved communication at various levels leads to cooperation among the development stakeholders. After country briefs by NINPs, the workshop deliberated on various priority issues at NAIS level, including standardization, coordination and sustainability. Through a group exercise, the participants came up with several recommendations for further development of the Global ARD Web Ring in which APARIS and its NAIS may participate using newly available tools/applications/frameworks such as RSS feeds, AgriFeeds, and CIARD. APARIS, through its own applications, demonstrated how these can be incorporated and implemented in NAIS.
2. *Memorandum of Understanding with Asian Institute of Technology (AIT Extension)*: Renewal of Memorandum of Understanding (MoU) with AIT has been initiated in November 2009 and it is in the final stages. Through the MoU, AIT would extend its faculty and ICT infrastructure support to APAARI for organizing capacity building programmes under APARIS.

3. Integration and Coherence of information

1. *APARIS Represented at the Regional Meeting of CAC-RAIS*: The second meeting of Central Asia and Caucasus (CAC) on Regional Agricultural Information System (RAIS) was held in January, 2007 at Tashkent, Uzbekistan. The meeting was organized by CACAARI in close collaboration with CGIAR-PFU. The representatives of the CAC NARS, GFAR, CGIAR-ICARDA, FAO, APAARI and AARINENA participated in the meeting to discuss the development and establishment of CAC-RAIS. The CAC participants showed special interest in the APARIS governance structure and activities. The role of Regional Fora and Regional Agricultural Information Systems in knowledge sharing / integration among NARS and others, strengthening collaboration among ARD institutions and capacity building were emphasized in the meeting. In this regard, CAC participants felt that learning from the experiences of APARIS could be quite useful for building the CAC-RAIS.
2. *APARIS represented at e-Agriculture Week* organized by FAO, Rome in September 2007 and presented its programmes and activities. The event also included: Inter-regional Consultation on ICM4ARD; EGFAR Task force Meeting and Second Expert Consultation on International Information Systems for Agricultural Sciences and Technology.

4. Improving governance of information flows and sharing and exchange of ARD information

1. *APARIS represented in the Expert Consultation to Review Progress of Agricultural Research Networks and Consortia in Asia-Pacific* in October 2007 in Hyderabad, India

organized by APAARI and hosted by ICAR and ICRISAT. During the consultation, it was felt that APARIS should target researchers and students for dissemination of web-based information on agricultural technologies. While there is a need to extend its reach to farmers, multiplicity of languages is a major hurdle. APARIS needs to work with other institutions (including IARCs) to facilitate down streaming for the dissemination of knowledge. ICRISAT showed willingness to partner with APARIS under the VASAT program to ensure that scientific knowledge and technologies are disseminated fast to the farming communities. It was also emphasized that APARIS should play a major role in sensitizing the NARS for sharing knowledge and joining the networks of their specific interest. Facilitators (IARCs and NARS) of networks and consortia have to have greater commitment to fund and support such activities, so as to make them more effective and sustainable in the long run. Also the donor partners need to appreciate vital importance of research networks and continue funding these innovative and rather very beneficial initiatives.

2. *Design of APAARI new website:* APAARI has launched its new website in August 2009 with new design, user-friendly information and navigational options. It is available at www.apaari.org. The new website provides access to more than 30 success stories, 35 issues of APPARI Newsletter, and more than 40 reports and proceedings of expert consultations. The website provides links to NARS in Asia and the Pacific region, partners like FAO, CGIAR, GFAR, AARINENA, FARA, CACAARI and directories such as research networks, projects database, ASTI databases, regional research networks etc. The website is being updated on regular basis with up coming events, activities completed and latest publications and planning to offer discussion forum, RSS feed Web 2.0 and Social Networking Tools soon for dissemination of agricultural research information efficiently.
3. *APARIS involved in e-Consultation of GCARD process in Asia-Pacific region:* With the support from GFAR and FAO, APARIS has been actively involved in facilitating the e-Consultation of GCARD process for Asia and the Pacific region during September 2009. Nearly 300 participants representing all types of ARD stakeholders participated in the e-consultations and over 350 messages have been shared on ARD issues in Asia and the Pacific region. Information on face-to-face meeting, regional reports under the GCARD process in the region have been shared through APAARI website.

APARIS Work Plan for 2010

The Eighth Meeting of the Asia-Pacific Agricultural Research Information System (APARIS) Steering Committee Meeting was held on 29th November 2009 at the Food and Agriculture Organisation-Regional Office for the Asia and the Pacific, Bangkok, Thailand. The Steering Committee has approved the following APARIS work plan for 2010:

1. Advocacy and Strategies for promoting ICM in ARD

- Development of Communication Strategy for ARD in the Asia-Pacific Region
- Status Report on ICT/ ICM in ARD in the Asia-Pacific
- Success Stories on ICT / ICM in ARD in the Asia-Pacific

2. Capacity Building Programmes

- Workshop for National Agricultural Information Systems (NAIS) (for 10-15 participants) with the support of GFAR and FAO during July-August 2010 (tentative)

3. Information Services, Products and Publications

- APAARI on CD-2010
- APAARI Newsletter: bi-annual (2 issues)
- Success Story on Innovations in ARD
- Developing digital archive of APAARI documents

4. Collaborating and Networking with other Regional Fora and Global Agricultural Information Initiatives

- Regional & Sub-regional Collaboration with SPC, SAARC Agriculture Centre, SEARCA, FARA, AARINENA, CACAARI, Foragro and Asian Institute of Technology (AIT) by networking and integrating their information resources
- APARIS as Asia-Pacific Nodal point for GFAR's Coherence in Information for Agricultural Research for Development (CIARD).

Highlights of the Eighth Meeting of APARIS Steering Committee

The important points that emerged during discussions are highlighted below:

- There is need for greater coherence in information management through cooperation, collaboration and partnerships for knowledge sharing at national, regional and global levels. Efforts should be made to improve accessibility, applicability and appropriability of agricultural information at all levels to address the needs of small and resource poor farmers.
- Emerging technologies like Web 2.0 tools, ontologies, semantic web and cloud computing would highly influence the exchange of agricultural information in the ARD community in future. It is necessary to strengthen the initiatives of FAO/CGIAR/GFAR and the CIARD RING (Roadmap to Information Nodes and Gateways) in the region through integration of APARIS activities
- Capacity building in ICM/ICT for NARS is an important priority area for improving application of ICM/ICT for AR4D in the region. APARIS should take lead in undertaking advocacy and capacity building programmes for different stakeholders viz. NARS leaders, ICM managers and NGO partners in the region.
- With the advances in ICT/ICM, there is need for improving the content management approaches for re-orienting agricultural information and knowledge in the wider perspective of knowledge for all.
- Advances like Cloud Computing, iPhone, 3G / 4G technologies (increase bandwidth, cellular wireless options and support to more diverse applications like voice, data and streaming multi-media services, 'anytime, anywhere') would transform the agricultural advisory services and encourage innovative partnerships and business models in ICM for AR4D in reaching knowledge to farmers for greater impact and income generation. There is a great need for sharing information on these new ICM/ICT aspects and orienting all stakeholders on the potential opportunities of ICT/ICM in AR4D.

- APARIS should engage in developing information resource base and providing access to ARD documents especially policy related documents, project information, R&D focus areas, evaluation / impact assessment of research and development investment and socio-economic aspects of ARD in the region.
- Information initiatives of global organizations like SIST, France; CABI, UK; National Agricultural Library (NAL), USA; CGIAR and DFID have to be integrated with the APARIS activities.
- As core partner of CIARD initiative, APARIS should take active role in advocacy, capacity building and content management issues in the Asia-Pacific region for making agricultural research information publicly available and accessible to all.
- APARIS should also perform a catalytic role in developing information standards, IPR issues related to information and knowledge and security. It should also take lead in promoting voluntarism in the region for knowledge for development impact and help align efforts by NARS and other stakeholders at national level to develop better networked agricultural information resources and services.

Annex 6

Report from CACAARI

CACAARI

CACAARI (Central Asia and the Caucasus Association of Agricultural Research Institutes) is an association of CIARD partner institutions.

CACAARI Secretariat has recently updated the available database and now has the most comprehensive database of NARS's, NGOs and farmer organizations in Central Asia and the Caucasus. CACAARI has facilitated and coordinated the creation of Farmer organization and NGO Consortia, which have been entasked with updating the GFAR and CACAARI farmer and NGO databases. A section at CACAARI website (www.cacaari.org) is dedicated to the database of farmer and NGO organizations.

Using the available GCARD e-consultations mailing list, CACAARI Secretariat also facilitated the exchange of information among ARD stakeholders from the civil society, NARS, youth and government and commercial organizations, as well as donors.

Governance structure

CAC-RAIS is an integral part of the CACAARI. The Steering Committee of the CAC-RAIS consists of representatives of CAC-NARS as well as GFAR, ICARDA and FAO. At the national level, CAC-RAIS is represented by National Information Nodal Points who serve as the linkage between the Steering Committee of CAC-RAIS and the national stakeholders in each country.

Strategies and Priorities

To improve and strengthen ICM for ARD (ICM4ARD) in the CAC region, the member countries identified the following strategies for implementation through the Regional Agricultural Information System for Central Asia and the Caucasus (CAC-RAIS) in 2007-2009.

Advocacy and sensitization of NARS leaders and policy makers to increase investment to improve information and communications management in ARD.

CAC-RAIS Steering Committee is supporting the development of national agricultural information systems through recommendations, strategy development and supporting policy making for ICM4ARD.

Strengthening existing (or establishing new where they do not exist) National ICM4ARD lead centers that contribute to strengthening National Agricultural Information Systems (NAIS) development.

Capacity Building

Sharing of information and dissemination of success stories in agricultural research for development through the existing CACAARI website and printed publications.

In January 2008, a pilot study on "Assessment of information and communication needs of institutions and stakeholders of the national agricultural research and extension system of Kyrgyzstan" was conducted. The objectives of the pilot study were to identify: policy and legal frameworks, institutional set-ups in agricultural research, extension/advisory services, education actors, farmer organizations together with their linkages and their information and

communication needs, in order to serve farmers' and agribusiness' needs in their orientation to markets. The surveys were conducted with 24 key actors in agricultural research, extension/advisory services, education, farmer organizations, as well as the Ministry of Agriculture and Water Management and Processing Industry of Kyrgyzstan. The final report of the survey is ready and available through ICARDA-CAC website (<http://www.icarda.org/cac>).

RAIS website

The CACAARI website (www.cacaari.org) serves as a window for counterparts both inside and outside the CAC region giving access to a map of agricultural research in the region. It provides a detailed list of agricultural institutions located in the region. The website has been created in two languages: Russian, as almost all institutions in the region speak or understand Russian, and English for visitors from outside the CAC region.

There are several sections in the website. In the News Section visitors can read about the latest activities of CACAARI; in the new version of the website there will be an option to also access the news as RSS feed. In the section on Country Profiles, users can find the Country Status Reports in PDF format for easy download. Finally, the section on Institutions provides a list of institutions that are working in partnership with CACAARI, including their contact details.

There is also a forum for scientific discussions in different research areas.

Some sections of the website are still under development with a view to increasing the usability of the website. Some key improvements have been planned among which:

- creating a database of publications of local scientists in different areas and sharing them at the regional level;
- implementing a directory of institutions, where you can find comprehensive information about the institutions like main research areas, research topics, scientists' profiles, photo-galleries of the scientific activities in the institutions, etc.

For prospective visitors to the CAC region additional information will be available about the countries, the traditions, holidays, climate, maps, sights and hotels.

Linkages with International, other Regional and NARS Information Systems

CAC-RAIS has been developing linkages with other stakeholders in the Global and Regional Agricultural Information Systems, such as GFAR, APAARI, AARINENA, as well as international organizations such as ICARDA and FAO. The respective representatives of the countries from the CAC region endorsed the AgroWeb Network¹ as a relevant initiative, which (i) enables the management of national information resources in agricultural research for development, and (ii) provides a gateway function from the regional level, facilitating access to national resources.

Latest developments

The Third Meeting of CAC-RAIS was held in April 2009 in Issyk-Kul, Kyrgyzstan. During the meeting, participants discussed the results of the pilot ICT needs assessment conducted for Kyrgyzstan in the context of validating its results for relevance to other countries in the region

¹ <http://www.agrowebcee.net/>

and developing a common project proposal for the development of the agricultural information system in the region.

On 16-17 October was held CACAARI Face to Face Regional Consultation Meeting in Tashkent for preparation to the Global Conference on Agricultural Research for Development, in 2010, Montpellier, France.

Annex 7

Report from FARA



Regional agricultural Information and Learning Systems (RAILS)

a project of the

Forum for Agricultural research in Africa

Highlights 2007 – 2009

This report is prepared for the purpose of the Global Forum for Agricultural Research meeting on GLBAL_RAIS held in Hyderabad, India, 10 Dec 2009. It will cover the highlights made by RAILS within the year 2007-2009. RAILS being an African platform composed of various institutions within Africa working in the area of information, learning and knowledge management. As such, it reports some highlights as model that can be scaled across Africa, having received investments from various development partners.

The highlights follow the RAILS framework that was validated by the 2007 RAILS platform meeting and which is also directly linked to Global Forum for Agricultural Research program on regional agricultural information system (Global_RAIS).

Advocacy for increased and improved investments in ICT and in sharing and exchange of ARD

Kenya is being recognized as one of the top African countries that is maximizing the use of ICT in agriculture. It has brewing agricultural communities using the combined SMS and internet to get advisory support and market information systems and trading goods. Kenya is one of the countries with national policy on ICT recently passed by their parliament. Through this policy, the Kenya agriculture research institute (KARI) has built a network called KAINet to put on line the rich knowledge resources from its various research institutions spread throughout the country.

Taking model of Kenya in establishing national policies on ICT, FARA is investing in several countries to build similar systems together with FAO. The initial countries identified are Zambia and Ghana. The main elements being used are; i) Establish a network among ARD institutions

Develop institutional ARD information and communication management strategies and policies

Strengthen human resources and institutional capacities in management and exchange of AR4D information and knowledge; ii) Build digital institutional repositories of public domain AR4D information; iii) Build a national portal for agricultural sciences and technology information; iv) Zambia is set to start the process by January 2010 and Ghana by mid 2010.

In addition to national advocacy strategies, FARA is continuously advocating for support in ICT within the level of African Union. RAILS is now considered as one of the ICT projects to

be supported within the CAADP process by the African Union. Discussions are ongoing on how to integrate RAILS within the CAADP tools and platforms that will contribute to its objectives.

Within the scientific community such as the Science Forum held in Wageningen, Netherlands in which GFAR organized a poster session on ICTs. RAILS was presented as an African platform that allows linkages among various information generators and users and, creates an information value chain allowing multiple information access, processing and uses. The platform facilitates the complementarities and synergies in the establishment and use of information systems that can catalyze agricultural innovations. RAILS provides an open space where agricultural information systems link ARD innovations to users and learners. RAILS catalyzes the creation of learning teams capable of analyzing information gaps of individual members and institutions and facilitating innovation together with users and generators of information.

At the IAALD Africa Chapter conference held in July 2009 in Accra, Ghana, RAILS organized a side-event to gather its partners and showcase its progress to other potential partners. The event highlighted activities conducted by the national focal points, either in terms on how they established their teams, gathered information to populate the eRAILS site or manage a dynamic network that is regularly exchanging news and ideas related to agricultural research for development.

RAILS also hosted the launching of the international initiative on Coherence in information systems for agricultural research for Development (CIARD). The RAILS platform members agreed that CIARD is an added value wherein it could assist national and regional initiatives align their efforts to develop better connected information collections and services. Discussions focused on focus on the needs of the NARS and how the different programmes, often funded by different donors and with specific sectoral mandates, better harmonise their interventions to achieve the common vision of 'helping the organisations that hold information or that create new knowledge – disseminate it more efficiently and make it easier to access.'

Capacity development

The RAILS concept of capacity development include that any information system/tools will only have impact if its content is properly managed to ensure relevant and updated information that can be easily accessed and understood by different categories of users. Information required by scientists is different from that needed by farmers or extension workers, and they often use quite a different language.

Many information systems do exist, but the real question is how information is gathered, entered, used and interlinked to other databases among different institutions including the civil society organizations. An information system might operate better if information gathering and updating are done by the most direct source. A system on monitoring quality of information should be put in place, to enable partners to check or validate the information.

Any information should be accessible to all users be it scientists, extension workers, farmers or policy makers. The data should be stored in the most appropriate places so that it can be easily updated by authorized stakeholders. It should also use the appropriate standards to ensure interoperability across countries, regions and globally. Appropriate, adequate and relevant training should be given to the actors based on their needs not just on how to operate the system but how to gather and update information from the right sources.

Based on these concepts RAILS conducted various activities at national, subregional and continental level. It is supporting its national and subregional focal points with infrastructure support such as computers, printers and internet connectivity.

Skills are built through training on specific needs and requirements to be effective information intermediaries. These were conducted through online and face-to-face training designed as complimentary activities to develop and operate a functional environment where all RAILS learning team focal points and members can share learning as they establish their own networks i.e. Online discussions to brainstorm on the concepts of learning teams and align activities towards a common goal; Face to face discussion to share the first experiences in establishing the learning teams and agree on how to move forward; Public debate on RAILS concepts and experiences as a side-event during the IAALD Africa Chapter conference and Online platform followup discussions on issues as it arise during the establishment of the RAILS learning team. These training had participation from all the 38 countries that RAILS is operating.

RAILS has also conducted workshop to improve the skills of its members in outcome mapping. Most of its focal points participated in the training where they agreed on a common vision and identify boundary partners to work in order to achieve greater impact in changing the behaviour of its members and partners.

Integration and Coherence of information

New tools or those that are currently being used by the national partners have to be assessed according to their effectiveness in providing the required services and their interoperability with different systems located in different institutions or countries. Tools could be clustered based on themes or users they are serving. Service providers for these information tools should also be evaluated on their capacity to provide assistance required by the users.

Tools need to enable smooth and fast exchange of information on innovative approaches to overcome constraints of traditional communication strategies and mechanisms. Pilot projects could be initiated to gather lessons learned on the process and the effective application of tools, as well as to identify resources needed to sustain the tools.

In order to achieve these concepts, FARA has conducted various complimentary activities that are targeted to various audiences and users. It has redesigned its portal which was launched at the FARA General Assembly in 2007. It uses CMS which provides the flexibility for FARA to keep update its system while building on past investments. It acts as a portal to link the various communication tools that FARA uses such as its bi-monthly bulletin, blogs and various publications.

At the same time, after various iterations with its partners and members, RAILS launched its eRAILS in July 2009, as a tool to facilitate communication of agricultural innovations at various levels, be it at the community, national, subregional or regional. It uses a phased approach of systems development where an initial framework is tested by its users, gets feedback from them to further improve the systems to ensure relevance to users and new progress within the IT community. eRAILS is now operating in 16 African countries with 33 accounts. It has a decentralized content management systems that takes advantage of the success of virtual communities.

Improving governance of information flows and sharing and exchange of ARD information

RAILS as a platform recognizes the importance that any information systems it uses are tailored to the social, economic and cultural settings they are operating in. The use and effectiveness of any information system will depend on the capacities and resources of its users and suppliers of information such as farmers, farmer support services and research institutions. Farmers may be limited in their direct access to telephone and internet access but

may have radios or TVs. Extension workers may be overstretched or may have limited knowledge on topics of interest to farmers,. Research institutions may not have developed the culture of openness or may not have fully grasped the holistic and integrated nature of agricultural innovation concepts driving African economic growth.

Having the right network of people and institutions with equitable partnerships and linkages may respond to these needs. If information and lessons learned are shared within the national network then responses or initiatives can be developed according to the needs and requirements of the end-users. Cultural preferences of end-users can be taken into account in the implementation of information systems.

Entry points for partnerships are not necessarily based on geographic location; they may also be commodity-based or have a thematic focus. To have an effect, they must be placed in an agricultural innovation context, promoting inter-linkages between actors in the agricultural market value chain and R&D facilitators.

Based on these concepts RAILS has conducted various activities to improve the governance of information flows and sharing and exchange of ARD information. It has created an online RAILS dgroup where ideas are easily shared among RAILS members and keep them abreast of new technologies.

To have a common framework of operation, it has built an operational manual on how RAILS learning teams are established and operationalized.

Assessment on innovation farmer advisory services was also conducted as an attempt to document all known systems currently used within the continent. The assessment focused on what types of projects are in existence, who and how many people they are reaching, and the sustainability of the projects it is necessary to look at how many projects have been implemented by or in collaboration with foreign organizations or institutions, the average duration of each project, how many projects are or were only in the pilot phase of implementation, the numbers reached (if indeed the information is provided), in which areas/regions/countries the projects are concentrated and whether the services have been provided in local languages or solely in English or French.

The assessment listed down the challenges that remain within the existing ICT systems used for farmer advisory services such as;

- SMS – mobile phones can only send out limited amount of information, but requires basic level of literacy
- Voice information delivery services requires adoption to various local languages. It has to have a Customer Relationship Management application to support integrated call. Its biggest challenges is handling and management of a very large audio database
- Web-based platform has too much information that it becomes difficult to digest by the farmers. It also assumes that farmers have reliable and good internet connectivity

The assessment concluded that traditional media (TV and Radio) is still seen as the most convenient channel in disseminating information to farmers.

Annex 8

Report from FORAGRO

INFOTEC, the FORAGRO information service:
Main actions and achievements, September 2007-December 2009

Introduction

INFOTEC began working as an online information sharing system during the year 2000, in response to a need for better access to agricultural science and technology information taking advantage of the Internet, manifested by the FORAGRO (Forum for the Americas on Agricultural Research and Technology Development) Executive Committee in the 1999 meeting.

FORAGRO is characterized by the participation of a wide range of stakeholders from different sectors: public, private, producer organizations, NGOs, universities and the international research organizations with headquarters in LAC. Representatives from all these sectors and from all the subregional instances – the PROCIs - constitute the Executive Committee. As most fora, its main focus is on dialogue, articulation, fostering alliances, advocating research and development to decision makers and promoting science and technology development. FORAGRO has defined seven lines of action in the political-institutional field, besides the agreement on priority themes for the continental agenda. Information management is one of these lines of action, including the information system which constitutes the Latin American RAIS (Regional Agriculture Information System), INFOTEC. IICA, in charge of the Technical Secretariat of FORAGRO, maintains this information service.

INFOTEC was created with a vision of providing services to all the different types of FORAGRO stakeholders, according to their needs. FORAGRO defined its objective: to improve the flow and access of information on agricultural science and technology. INFOTEC works towards this objective by providing up to date information on new research and technologies in an easy to access form. It also facilitates information sharing, providing a platform that allows and promotes the participation of stakeholders, and it enables communication tools for different networks or interest groups according to their needs. INFOTEC, in response to demands, also complements the information system with efforts in technical cooperation on information management, especially in advocacy and capacity building. This is a summary of the main actions and achievements in each of the four components of ICM4ARD during the period of this report.

Advocacy

The main objective for efforts in advocacy has been to raise awareness on the crucial role of information and communication in technological innovation processes. INFOTEC has not advocated for a specific way to organize information or plan ICM activities.

There are different target audiences for advocacy efforts, such as the decision makers or managers of organizations that promote innovation, the information and communication

managers in these organizations, and other innovation stakeholders (including researchers, “extensionists”, and others). The activities during the period for this report can be presented in two main groups:

1. Providing evidence:

Advocacy efforts need to be sustained on convincing information regarding the current situation and practices, the investments in ICM at national level, good practices, success stories, measures of impact, etc. In this sense, INFOTEC, with the support of GFAR, concluded in 2007 a project which had the following final products:

1. publication on success stories in the use of ICTs for agricultural innovation
2. document on the situation of IM and ICT capacities and use in NARS
3. project for a communication strategy for advocacy directed to ARD managers

These products were disseminated and used in different ways, since then. They form part of examples and arguments in presentations for different audiences and have served as the basis for identifying key contacts in LAC countries. The project for the communication strategy, however, has not found an interested funding source and constitutes one of the ongoing efforts.

During 2007-08, IFPRI’s initiative on Agriculture Science and Technology Indicators (ASTI) updated the information for 15 LAC countries. IICA participated in this effort, through an IFPRI-IICA agreement, particularly in the case of Central America. This provided an opportunity to include a few extra variables to assess ICM (access, connectivity, ICT capacities) in the ASTI study for Central America. These results are published and available.

2. Addressing audiences:

The most important activities addressed to different audiences for advocating on ICM for innovation were:

1. In the 2008 FORAGRO Meeting, a parallel knowledge management session was included, focusing on management of technical information for innovation and on management of rights (intellectual property) public regional goods. This led the way to the inclusion of the management of technical information for innovation included in Final Declaration as a key topic for joint actions.
2. IICA has a leadership program and one of the types of events for workshops and seminars in this program is “Leadership for innovation”, particularly in Central America. In the last two years, sessions on ICM have been included in these events with SICTA (the subregional cooperative research program for C. America) stakeholders.
3. Increasing frequency of ICM and KS issues included in FORAGRO and IICA events related to institutional innovation, research policies, redefining “extension”/technical services, etc.

“Capacity development”

Capacity development is in quote marks to stress the fact that it is viewed as promoting communication to enhance capacities, or promoting peer to peer learning... The actions in this aspect can be grouped according to the stakeholders involved:

1. In the case of research managers, policy makers, researchers, and other non specialized “audiences”, the strategy is to take advantage of meetings and seminars

that typically have a wide scope of topics to introduce a session in which we seek to promote discussion and sharing of:

- Basic concepts: information, knowledge, IM, KM, KS, role of technical information for innovation, communication for learning,...
- Evidence and experiences.

There have been 9 such events in the past 2 years, including those mentioned under advocacy, as well as board of director meetings for subregional cooperative programs (PROCI), extension meetings, etc.

2. In the case of information managers of research/innovation organizations, the objective is to promote learning through peer to peer communications and the development of a group or community (of learning, of practice,...) – a critical mass for discussion and actions. This has proved difficult to carry out because identification of the right person within each organization is not straightforward and because gathering people requires funds. We have been able to advance in:

- The identification of key actors in many organizations, first through the characterization in 2007 and later complemented and updated taking advantage of each available chance.
- On the job “training” or joint development of regional infotec-based systems; the most recent case is work done in 2009 with the manager of SICTA information system.
- Online courses: one in 2007; currently a new “online workshop” is in the design process.
- The first face to face meeting of “key ICM actors” in several years took place this year, for the CIARD workshop in Lima, Perú. A virtual space to share information was then created, in the form of a community of practice with several tools available for participation: wikis to propose changes to CIARD documents, discussion boards, announcements, etc. Our challenge in the next months is to increase the participation in the space and define the way to incorporate key actors from countries and organizations that were not present at the workshop.

Integration and coherence of information

INFOTEC, as a web-based information sharing system specialized in information on agricultural science and technology (including research and extension policies), shares the infoagro.Net platform with other specialized information services managed at IICA: trade, animal and plant health and food safety, sustainable rural development, agribusiness, ag-industry, biotechnology, etc. All these services are integrated and share programs and databases for all the information types. Within INFOTEC, the strategy of putting into place a system where users can include their information (voluntarily) and so integrate it with the rest is still in place and working. This, in itself, has challenges which are described in the next chapter.

In the past, the initiatives for integration or coherence in the world have been focused mainly on scientific publication of research outputs and improving access of information by researchers. These are important, but do not answer the needs of all FORAGRO/INFOTEC stakeholders. Neither do they necessarily help innovation.

The CIARD initiative, in this sense, is apparently including some elements from an “innovation” perspective. The openness to participation it has shown in the regional workshops will probably strengthen this point of view. The possibility may finally exist to cover a broader scope of information types and needs, joining forces to develop ways to improve the way technical information is managed and shared.

Governance

INFOTEC does not have a specific governing structure, so major decisions are taken within the FORAGO Executive Committee. The day to day management of INFOTEC is an activity of the FORAGRO Technical Secretariat at IICA, while the content or focus of the information included in the system can be defined through the participation of registered users. Within FORAGRO it has not been considered necessary or feasible to create a more formal governance instance for this specific line of action.

Challenges and future activities

In the short term, these are some of the activities we can foresee:

- Advocacy:
 - An “ICM for innovation Certification Program” was suggested by the experts who prepared the communication strategy in 2007. As stated above, it has not been possible to procure funding for this project. At the CIARD workshop this year, a similar concept was proposed by some participants. Maybe it is an idea that can become attractive for joint actions...
 - There is a permanent challenge to incorporate technical information management for innovation more explicitly in proposals for institutional innovation / modernization.
- Capacity development
 - The design of the “online workshop” must be completed
 - Include ICM elements in the (re)organization of “extension services”
 - Consolidation of CIARD-LAC group for peer to peer learning
- Coherence
 - “Modernize” infoagro.NET platform sounds like an obvious need, but the fact that “it works” makes it less urgent.
 - Advocate for LAC suggestions to CIARD documents (Lima workshop, CoP)
 - Promote participation of more organizations in the CIARD-LAC group
- Governance
 - Periodic analysis of need and feasibility of a more formal structure. Maybe the CIARD - LAC group evolves towards some kind of governance instance.