# GLOBal ALliance of the Regional Agricultural Information Systems (GLOBAL.RAIS) Project

**Global Forum on Agricultural Research (GFAR)**

# Contents

# Executive Summary

**Main Goals**

In Agricultural Research for Development (ARD), initiatives have been undertaken by the various stakeholders to launch information and communication systems. The Sub-Regional and Regional Fora of the NARS (National Agricultural Systems) have launched Regional Agricultural Information Systems (RAIS). To achieve consistency the building up of these information systems , two general objectives can be formulated within this project:

(1) To co-build a shared strategic agenda in information and communication management related to ARD, at the Regional and Global level;

(2)To launch *E*GFAR as a portal for ARD enhancing a transparent access to the RAIS information resources.

**Specific Objectives**

(1) To co-build a strategic agenda in Information and Communication Management related to ARD, at the Regional and Global level. Four specific objectives are proposed:

- To achieve a priority setting exercise for all the RAIS;

- To define common tools to promote exchanges of information;

- To encourage the RAIS offering comparative advantages to lead activities;

- To promote exchanges of experiences.

(2) To launch *E*GFAR as a portal for ARD enhancing a transparent access to the RAIS information resources. Two specific objectives are proposed:

- To launch with all the RAIS stakeholders an *E*GFAR webring;

- To provide a multihost database search engine on the *E*GFAR gateway.

**Plan of Work and provisional Budget**

These objectives will be achieved through:

a) electronic discussions an e-mail conferences

b) support missions executed by an advanced RAIS manager

c) four regional workshops and an inter-regional workshop

| Regions | Regional and inter-regional workshops |
|---|:---:|
| Near East and North Africa | 14,000 € |
| Asia Pacific | 14,000 € |
| Africa | 14,000 € |
| Latin America and the Caribbean | 14,000 € |
| Central Asia and Caucasus | 14,000 € |
| Inter-regional level | 15,000 € |
| **Total** | **85,000 €** |

# GLOBAL.RAIS project

## 1. OBJECTIVES

### 1.1. The problem

In the area of Agricultural Research for Development (ARD), the various stakeholders involved both at the national level, NARS (National Agricultural Research Systems), and at the regional level, the Regional or Sub-Regional Fora (RF/SRF) very clearly expressed the need, in their regional priority setting exercise, to strengthen their Regional Agricultural Information System, RAIS. Existing RAIS are: INFOTEC in Latin America and the Caribbean; APAARIS in the Asia/Pacific region; AARINENA-RAIS in the WANA region; and EIARD-Infosys in Europe. Two sub-regional projects in Sub-Saharan Africa, CORAF/WECARD and ASARECA, are also being developed with the support of the European Union. In developing these information systems they have provided the evidence that they are able to pursue their tasks in Information and Communication Management (ICM) in order to strengthen their research capacities. However, these information systems are not at the same level of development and each has a varying wealth of content. For example INFOSYS, the product of the European Initiative in ARD (EIARD) and with the support of EC funding, has matured into a comprehensive and effective source of information for a wide range of end-users, while no initiative has been taken in Central Asia and Caucasus.

At the same time, the Global Forum on Agricultural Research was launching his website, *E*GFAR, as a communication plat-form that would enhance dialogue between all the stakeholders of the GFAR initiative: National Agricultural Research Institutions of the South, Advanced Research Institutions of the North, Farmers Associations, NGOs, private sector, donors and NARS. The *E*GFAR plat-form and its participatory approach facilitates the involvement of all the stakeholders in ARD. For example, the private sectors' initiatives in agribusiness and biotechnology. The methodology is based on a participatory approach and a collective learning process in information management, allowing the various partners to evolve from an alliance to a real consortium.

The main goal of GLOBAL.RAIS then, is to bring consistency to these initiatives at several levels in order to achieve economies of scale and synergism. To maintain consistency and achieve synergy in Internet based information systems one must ensure compatibility with other systems so as to allow smooth exchange of data and information at a global level. To achieve this, the principles of decentralisation and subsidiarity must be followed so as to involve all stakeholders proactively in the new Knowledge Society.

Within this main goal, two general objectives can be forwarded:

- To co-build a strategic agenda in ICM related to ARD, at the Regional and Global level;

- To launch *E*GFAR as a portal for ARD enhancing access to the RAIS web information resources.

### 1.2. General Objective 1 (To co-build a shared strategic agenda in ICM related to ARD, at the Regional and Global level), and related specific objectives

To achieve compatibility as well as economies of scale and synergism four (4) specific objectives can be formulated:

- To conduct a priority setting exercise for all the RAIS within a global vision while maintaining specific approaches and complementarity;

- To define common tools and standards in order to promote and facilitate exchanges of software and information, as well as backstopping activities between all the RAIS;

- To encourage the RAIS offering comparative advantages to lead the development of systems and methodology that are of common interest to the other stakeholders;

- To promote the exchange of experience, human resources with specific skills, and crosscutting activities between all the stakeholders of the RAIS.

The specific set of expected outputs is to build a strategic agenda and related plan of work, exchange of software, acknowledgement of standards and common tools related to information management. The key expected output however, is to build a community including all RAIS stakeholders thus enabling a Knowledge Society.

**1.3. General Objective 2 (To launch *E*GFAR as a portal for ARD enhancing access to the RAIS web information resources) and related specific objectives**

GFAR has no comparative advantage to manage a centralised database on any topic (directories of researchers, research networks or institutional information, document repositories or bibliographic information, etc.). But GFAR should play a facilitating role to support RAIS in the design and management of their own information systems. GFAR should stress compatibility and keep at the global level the specific responsibility to launch, through its own portal, a gateway function that would allow access to the web resources of the various RAIS. A global agreement with all stakeholders who share this vision must be launched to allow the operationalization of this proposal. To achieve this Internet based technology and decentralised information management system two specific objectives are forwarded:

- To launch with all the RAIS stakeholders an *E*GFAR webring;

- To implement a multihost databases search engine on the *E*GFAR gateway.

The webring will be a formal agreement between all the RAIS willing to share the resources of the various databases they manage. The multihost database search engine will be more than a metaengine allowing access to webpages of a selected subset of websites in that it will allow access to the actual contents of the databases hosted by these websites. This implies a high level of technical compatibility that can be achieved through crosscutting of experiences and the technical meetings and workshops at both the regional and the global level. Electronic discussions and e-mail conferences will precede these meetings so as to ensure continuous dialogue throughout the project punctuated by concrete outcomes from workshops.

**2. CONTRIBUTION TO THE PROGRAMME OBJECTIVES**

The Global Forum on Agricultural Research, launched in 1996, aims to be a neutral and transparent stakeholder-led-platform allowing all the stakeholders involved in Agricultural Research for Development to:

- Share information and communicate in a more effective way;

- Discuss global and often controversial issues, acknowledging that possible differences of opinions do not preclude the enormous potential for co-operation;

- Launch and build research partnerships through the design and implementation of Global Programmes;

- Provide access to institutional support, in particular for the developing country NARS.

GLOBAL.RAIS will strengthen both the information and communication system of *E*GFAR and *E*GFARs' relationships with the various RAIS. As a global plat-form of communication, *E*GFAR aims to promote RTD co-operation internationally, and more specifically to promote scientific co-operation in ARD between Europe and ACP, ALA, and Mediterranean countries. GFAR and its specific communication tool *E*GFAR play a facilitating role to launch a global research system in ARD

through emerging Global Partnership Programmes of research (GPPs). Some GPPs are now well established, such as the programme on direct sowing, mulch based systems and conservation agriculture (DMC) led by CIMMYT and CIRAD, or PROLINNOVA, promoting local innovation. Very recently, 9-10<sup>th</sup> of October 2001, a technical workshop on methodologies, organisation and management of Global Partnership Programmes was held in Rome, with the support of IFAD. GLOBAL.RAIS and *E*GFAR are potential tools for supporting the implementation of programmes and projects conceived during the workshop.

Ensuring co-ordination with other programmes of research allows ARD research in the South to adapt to globalisation. It is also concrete way to make the most of research by strengthening the policy management capacity and to promote the institutional development of southern research institutions, allowing them a shared scientific excellence with European Institutions within a wider international framework.

## 3. DESCRIPTION OF THE MEASURE

### 3.1. General description of the measure

GLOBAL.RAIS intends to launch regional technical workshops in the less advanced regions to support the related RAIS. These regions are a) Near East and North Africa, b) Asia Pacific, c) Central Asia and Caucasus and, d) Africa. These technical workshops will be prepared by electronic discussions and e-mail conferences, and with support provided through a technical mission assumed by a manager of an advanced RAIS and/or the *E*GFAR manager in order to prepare the regional workshop.

After these four workshops an inter-regional workshop will be held, involving all the RAIS stakeholders. Continuous virtual dialogue will ensure the collaboration necessary for a successful project.

### 3.2. Detailed activities and dissemination of deliverables

The following proposed activities will be undertaken as facilitating activities for the various RAIS. They will be developed in close relationships with FAO, which hosts GFAR, and in particular with the WAICENT Outreach Programme, with which previous co-operations have already been built.

- *Pre-consultation discussions and e-mail Conferences*

Inter-regional e-mail discussions between and among RAIS regarding a) their information strategy, b) the critical issues they face, c) their ongoing activities and projects and, e) identification of crosscutting opportunities will precede support missions and regional workshops. Further discussion will expand on the specific questions and agenda to be addressed by the process. An e-mail conference will be undertaken for any specific technical problems to be collectively solved or addressed prior to the regional workshops.

- *Support Missions and Regional Workshops*

The workshops will be organised by the support missions, and the ToRs for each prepared in the preceding e-discussions. This technical support will be responsible for the various aspects of management of RAIS and will help to design the functional activities to be developed at the regional and global level.

Such workshops (held for the less advanced regions (4): Africa, WANA, CAC and Asia and Pacific) would be attended by between 8 and 12 participants. The two main expected outputs of these four regional workshops, beyond those of cross-cutting human resources and skills, are to define a plan of work for each RAIS, both pragmatic and consistent with the other RAIS, and to build a concept of the

evolution and status of the RAIS project since the first RAIS meeting held during the May 2000 Dresden Conference.

- *An inter-regional Workshop*

This inter-regional workshop would be held after the regional workshops. The following outputs of such an inter-regional consultation are expected:

- shared vision on activities to be developed at the regional and global (*E*GFAR) levels;

- mechanism for enhancing networking between RAIS and *E*GFAR such as a webring to access to decentralised web information resources;

- building up of cost-sharing mechanisms and building up of thematic consortia;

- identification through a comparative advantage analysis of a RAIS that could act as a leader for a specific component of an ICM issue of common interest for other RAIS;

- proposals for enhanced interactions between national, regional and global level.

- *Post-Workshop Activities*

1. The outputs of these participatory processes (strategic agenda, standards to manage information, technical recommendations) will be disseminated at a worldwide level through the communication channels of *E*GFAR and those of the various RAIS, mainly on Internet. Statistical data on the number and quality of people attending to the worshops, on the hits on the various websites, on the number of electronic discussions and on the partnership agreements will be monitored to enable a quantitative assessment of GLOBAL.RAIS. Special highlights of the outputs related to the ICM management will be used for regional and global meetings related to research topics in ARD, in which ICM is regularly a critical issue and a topic of discussions.

## 3.3. Provisional timetable

| CALENDAR ACTIVITIES | 1st trimester | 2nd trimester | 3rd trimester | 4th trimester |
|---|---|---|---|---|
| Regional support mission | Near East and North Africa, Asia and Pacific | Central Asia and Caucasus, Africa | | |
| Regional workshop | | Near East and North Africa, Asia and Pacific | Central Asia and Caucasus, Africa | |
| Inter-regional workshop | | | | Hosted in FAO Rome, Italy. |

## 4. COMMUNITY ADDED VALUE AND CONTRIBUTION TO EU POLICIES

The sets of previously described activities, which will be undertaken during the GLOBAL.RAIS project, will lead to the strengthening of the RAIS of all the Regional and Sub-Regional Fora (RF/SRF). This in turn will contribute to the building of a regional community of research in ARD. The RF/SRF in question are:

- AARINENA in the Western Asia and North Africa Region,

- APAARI for Asia and Pacific,

- FARA in Africa,

- FORAGRO for Latin America and the Caribbean countries,

- And the Agricultural Research Forum of the CAC region.

The RAIS will become a communication plat-form at the regional level and will offer an interactive space for dialogue between all the regional and sub-regional stakeholders: Agricultural Research Institutions, NGOs, Farmers Associations and the private sector.

GFAR, as a multistakeholder led initiative at the global level, also offers the possibility of a promoting inter-regional dialogue and co-operation. With the recent decision of the European Commission to organise the new (6th) Framework Programme around the emergence and strengthening of an "European Research Area", the European Forum in Agricultural Research for Development (EFARD), in close co-operation with EIARD, has decided to seek inputs from southern regional Fora (RF/SRF) through the GFAR pathway, in addition to the mobilisation of the European National Fora for this exercise. This is a concrete output of dialogues, launched and followed-up by GFAR, between the stakeholders in ARD at the local and global levels. The encouragement and facilitation of dialogues involving the EU stakeholders at various levels – from the local to the global– is a real added value brought by GFAR.

## 5. BACKGROUND INFORMATION ON PROPOSER

In October 1996, key players in agricultural research around the world joined forces in a dynamic initiative: the Global Forum on Agricultural research, or GFAR. GFAR was founded by representatives of the National Agricultural Research Systems in developing countries (NARS), Advanced Research Institutions (ARIS), Non Governmental Organisations (NGOs), farmers'organisations, universities, the private sector, International Agricultural Research Centres (IARCs) and the donor community.

GFAR is managed by a Steering Committee that works in close collaboration with a donor support group. Both are assisted by a secretariat hosted by the Food and Agricultural Organisation of the United Nations (FAO) in Rome, Italy.

**The GFAR Steering committee** has 13 members representing the seven categories of stakeholders:

- Regional Fora of the NARS from the South (5 seats): Asia Pacific, Central Asia and Caucasus, Latin America and the Caribbean, Sub-Saharan Africa and West Asia and North Africa;

- Advanced research institutions and universities involved in co-operation with NARS ( 3 seats): Europe, North America and Australia;

- International Agricultural Research Centres (1 seat);

- NGO community (1 seat);

- Farmers'organisations (1 seat);

- Donor Community (1 seat).

The Chairperson is from a southern NARS and the Vice-Chairperson from another category of stakeholder so that the Steering Committee is represented by two different groups of stakeholders.

**The GFAR donor support Group** (GFAR DSG) under the leadership of the International Fund for Agricultural Development (IFAD), mobilises the international donor community in support of the GFAR Initiative.

**The GFAR Secretariat** facilitates the day-to-day operations of the Forum. It acts as the implementation body for the GFAR core activities and plays a catalytic role for projects carried out within the GFAR framework. The Secretariat acts as a broker, encouraging and facilitating strategic alliances and research partnerships. It also assists ongoing policy dialogue on issues of global importance, promoting the participation of a broad array of agricultural research stakeholders. Finally, the Secretariat supports the strengthening of NARS as key components of a global agricultural research system. The GFAR Secretariat is headed by an Executive Secretary and composed of three senior officers and three APOs. The Steering Committee and the donor support group meet twice annually, in conjunction with the CGIAR events and the GFAR plenary meeting convenes once every three years.

**The GFAR budget** is approximately $US 300,000 for the Secretariat and roughly the same amount for its operations. One of the basic financial principles of GFAR is "cost sharing", with each partner contributing to the GFAR programmes according to their resources.

**A GLOBAL.RAIS Steering Committee** will be launched in order to manage and monitor the project GLOBAL.RAIS. This steering committee will be composed of: a) one representative of each RAIS, nominated by the Chairperson of each Regional Forum ( five seats); b) one representative of a key player in agricultural information management at the global level from the Waicent Outreach programme of FAO and, c) the *E*GFAR manager. The GLOBAL.RAIS Steering Committee will conduct most of its activities electronically.

## 6. PROJECT MANAGEMENT

### 6.1. General rules of management

The GFAR Secretariat is hosted by FAO, but has an independent bank account. GFAR follows the international rules of the United Nations for its financial management. From the perspective of clarity and transparency this provides a comparative advantage as there are no rules and procedures unique to the GFAR Secretariat. All that is related to the hiring of consultants, the payment of travels, daily subsistence allowance (DSA) or travel expense claims (TEC) are well established within the FAO procedures which clarifies and facilitates the granting of finances from donors.

### 6.2. Decision making structure and communication flow

The project will be led and financially managed by the GFAR Secretariat. The *E*GFAR manager will chair the project steering committee involving the RAIS managers and a representative of the WAICENT Outreach programme of FAO. Decisions will be made through electronic discussions and critical issues of global interest will be discussed in electronic conferences. As a direct output of the *Dresden 2000-GFAR Conference*, the representatives of the Regional Agricultural Information Systems who attended made the decision to block the domain prais.org in order to launch a dedicated space for discussions. This domain will be used for the activities of the project steering committee, as an acknowledgement of this RAIS initiative.

## 6.3. Justification of the budget estimate

The budget has been constructed considering three different types of costs: a) personnel cost related to the involvement of the *E*GFAR manager during the project cycle on a *pro-parte temporis* basis, b) costs related to the hiring of RAIS consultants to support the management of other RAIS and, c) the costs of launching the four (4) regional meetings and one (1) inter-regional meeting. The two last items include travel and subsistence costs for the various stakeholders involved in these activities. The travel budget has been designed to ensure sufficient participation of the partners thus allowing good co-operation and effective workshops.

Costs are based on FAO/UN rates and their related rules: each regional workshop is estimated to cost 17,500 ε , the inter-regional workshop is estimated to cost 25,000 ε and the cost for mobilising specific expertise is estimated to be 25,000 ε.

The EGFAR manager is considered a P-5 on the grid applied to FAO professional personnel. The gross salary is evaluated at 120,000 ε. During the full duration of the project, estimated to be one year, half of the manager's time will be spent on managing the project, launching the ongoing activities and following-up on the programme of work.

The various costs are summarised in the following table.

| ACTIVITIES<br><br>REGIONS | Regional and inter-regional workshops | Hiring of expertise and support missions | Personnel costs of GFAR Secretariat and (+) overhead costs |
|---|---|---|---|
| Near East and North Africa | 17,500 € | 5,000 € | |
| Asia Pacific | 17,500 € | 5,000 € | |
| Africa | 17,500 € | 5,000 € | |
| Latin America and the Caribbean | | 5,000 € | |
| Central Asia and Caucasus | 17, 500 € | 5,000 € | |
| Inter-regional level | 25,000 € | | |
| Total per activities | 95,000 € | 25,000 € | 60,000 € + 5,000 € |
| **TOTAL** | **185,000 €** | | |
| P.M. | Requested Contribution from the Community 125,000 € ( 67 %) | | |

## 7. ECONOMIC DEVELOPMENT AND SCIENTIFIC AND TECHNOLOGICAL PROSPECTS

The international community in ARD is facing an increasingly complex challenge of feeding the world-wide growing population, while assuring an equitable development and a sustainable management of natural resources. The environmental and socio-economic deterioration that many developing countries are facing poses an unprecedented challenge of mobilising and applying the potential capacity of scientific progress.

This is the core of the international role of Community research towards which the E.U. should play a significant role by sharing its experiences in research networking.

In achieving the proposed project three strategic impacts are foreseen:

- Firstly, **education and human resource development**, which continue to be the main limiting factors in most developing countries, will lead to the building of pools of knowledge relevant to the regions and their e-learning process;

- Secondly, development and strengthening of a **knowledge generation capacity** through research (R&D capacity), especially in the case of agriculture and natural resources management, where site specific research is required to adapt technological development processes to particular socio-economic environments or local constraints;

- Thirdly, development or **strengthening of innovation capacities** that requires not only effective extension services but also more farmer involvement to ensure a process of social appropriation of knowledge. This can be only achieved through a people oriented effort involving a multistakeholder led platform such as the one that GFAR is able to foster, thus enhancing participatory approaches.

A new paradigm for ARD is progressively emerging in which a diversified range of research partnerships are being built. The main challenge that remains is to develop a general framework that can facilitate economies of scale, strategic alliances and joint ventures between the various actors involved at all levels: local, national, sub-regional, regional and global. Such a framework can provide benefits to both non E.U. partners and E.U. actors in the field of ARD. In launching a communication platform, facilitating cross-cutting activities, and enhancing shared ICM activities between the RAIS of the various RF/SRF, the E.U. will contribute to the co-building of a research agenda that would lead to a Global Research System in ARD.

# AARINENA-RAIS Workshop

## 25-27 February 2003

## Cairo, Egypt

### Introduction

1. The meeting was sponsored and managed by GFAR, AARINENA, ARC, and FAO/RNE.

2. The agenda, attached as appendix A, was modified as follows :

   a. The program of Wednesday 26 February 2003 was changed to be Reports from countries in the WANA region in the morning session, and working group discussions in the afternoon session

   b. The program of Thursday 27 February 2003 was changed to be: Recommendations, and Discussion on Proposed Collaborative programs, in the first morning session, and steering committee election in the second morning session.

3. Appendix B includes the modified list of participants. Mrs. Taraneh Ebrahimi – AARINENA-RAIS Webmaster, and Mr. Dady Demby – CORAF/WECARD's representative could not attend the meeting. Mr. Hattar represented the AOAD. Mrs. May Hani from FAO, and Mr. Mohamed F.Nawar IPGRI/RIISFC also attended the meeting.

### Opening Session

4. Dr. Fardous gave the AARINENA statement in which he emphasized the vital role the RAIS can play in the WANA region and the commitment of AARINENA in developing this system. He reviewed AARINENA past activities since the 8th General Conference in Beirut and thanked GFAR, ARC and FAO for organizing this meeting.

5. Dr. Giovannetti presented GFAR statement and mentioned that GFAR supports Global RAIS. He also mentioned that this is the first consultation in a series of similar consultations that will be held in the different regions. He underlined that APAARIS and INFOSYS managers, coming from Asia/Pacific and Europe were attending this regional workshop. He thanked Mr. Dirk Pottier from EC/DG Research to have funded this regional workshop through INCODEV Accompanying Measures.

6. Dr Khalifa conveyed to the attendees regards from H.E. Dr. Yousef Waly, Deputy Prime Minister and Minster of Agriculture. In his statement Dr Khalifa stressed the importance of ICT in agricultural research and the commitment of ARC to this fast growing technology. He presented some examples of using ICT in ARC such as remote sensing and GIS, expert systems, and the ARC integrated information system that is currently being developed.

### Status of Implementation of RAIS

7. Dr. Ahmed Rafea reviewed the RAIS strategy in the WANA region, the report of Cairo workshop that was held in October 2000, and the project proposal prepared for RAIS as a result of this workshop.

8. Mrs. Mahvash Behroozin, instead of Mrs T. Ebrahimi who was unable to attend the workshop, made the second presentation. In this presentation she reported on the current status of the AARINENA-RAIS Web site, and on the related expectations for its development.

9. After the presentations, the following comments were made:

   - Dr Giovannetti (GFAR) stated that there is a need to move away from centralized databases management systems. Instead, he suggested, that each information producer could manage their own information, in which case the AARINENA-RAIS Web site

could serve as a portal for those various decentralized web information resources. He also suggested, that through a regional framework, there could be combined leadership of this effort.

- Commenting on the report made on AARINENA-RAIS Web site, in which it was stated that one of the most difficult problems faced by its developer was the fact that a lot of data was missing, Mr. Tamzini suggested that contact should be established between the developers of the web site, and various organizations and institutes in order to bring them awareness of the existence of the site.

- Dr. Fawzy Naim suggested that various countries should be encouraged to build up their own databases and websites and standardize those in order to facilitate communication amongst all regions.

- AOAD announced the existence of a statistical database for use by any interested party at: http://www.aoad.org

- Lebanon's representative requested that better ways for establishing communication with both regional and focal points, be looked into.

10. Dr. Ahmed Rafea highlighted and summarized the main issues raised as follows:

- Strengthening the NAIS in all countries of the region

- Strengthening communication between members on ongoing ICT activities or initiatives

- Standardization of tools to be used in development of systems

- Coordinating the training activities that take place in the region

### Experiences of Regional & International Organizations

11. Mr. Portegies Zwart presented FAO's strategy for strengthening RAIS. He highlighted FAO's role in developing standards and methodologies for the exchange of agricultural information, with particular reference to AGRIS/CARIS (publications and on-going research activities), VERCON (strengthening links between research and extension) and TECA (proven technologies). . He suggested that anyone interested participate in the discussion forum on the new strategy for AGRIS. Mr. Portegies Zwart also described FAO's efforts to build national capacities in agricultural information management, and expressed the Organization's continuing willingness to cooperate with regional initiatives in this respect.

12. Ms Bonaiuti gave a presentation, which first focused on GFAR's Web site. Some of the important issues raised, included:

- The need to decentralize database implementation be allowing each country to build their own, and to provide a gateway for the access of these databases

- The development of Management information tools for monitoring ARD activities.

- The facilitation of access to scientific publication generated by agricultural research centers in the region.

Then she highlighted the expected plan of work and budget of the Global-RAIS project funded by the EC, DG/Research.

13. Dr. Maliha presented ICARDA's ICT strategy and its various activities to promote information exchange within the region. In his presentation, Dr. Maliha stressed the importance of encouraging countries to use AGRIS as a means for agricultural document management.

14. Dr. Maru presented ISNAR's experience in the development of a management information system, through a focus on the INFORM project and its relevance to regional organizations. In his presentation, he stressed that information systems should be allowed to evolve over time, and that systems should adopt accordingly.

15. Mr. Singh presented APAARI's experience in the development of RAIS in Asia/Pacific, underlining the main achievements of the phase 1 and the specific objectives of the phase 2.

16. Mr. Bernard presented ZADI/EIARD-Infosys's experience in the development of three systems: Alert, Groupware and Node XML.

17. In the discussion that followed Dr. Giovannetti highlighted some of the important issues that were raised throughout the day:

    - The importance of developing specific databases related to research centers and institutes

    - Information System development should be backed by political commitment

    - Big problems can be divided into smaller ones each of which can be handled by a specific institutes with specific funding and thus a more well defined basis for collaboration can be established.

    - The importance of addressing human resources training and communication

18. Based on the issues raised throughout the day, a number of points were identified for discussion by working groups. These were:

    - Identifying, prioritizing, and launching a set of databases to be implemented for various countries.

    - Defining what a gateway function is, and going further in discussing what is needed for its development.

    - Addressing training and communication issues.

    - Discussing the concept of rural nodes and VERCON as a means for improving communication

    - Defining terms of reference for AARINENA RAIS.

    The discussion sheet in appendix C was prepared accordingly.

## Country Reports on Present Status of ICT and Future Coordination with AARINENA-RAIS

19. Representatives of the national agricultural research organizations of Cyprus, Egypt, Jordan, Iran, Kuwait, Lebanon, Morocco, Oman, Sudan, and Yemen made presentations. Each of the representatives explained the current status of information management in their countries, and highlighted resources such as existing information, human resources, and training materials, that can benefit from further development and integration within the broader scope of RAIS. Collectively, they presented a wide range of capabilities in ICT management and system development.

## Working Group Discussions

20. Attendees of the workshop were split into two groups and given the discussion sheet in appendix **C** for review. When splitting the groups, an attempt was made to place an equal number of representatives from national organizations (NARS), in both groups. Each group contained members of similar regions.

21. Group 1, came up with the following recommendations:

    a. With respect to the first point, the group suggested the development of relational databases to include:

        - Institutional information

        - Expert/expertise information

        - Research project information

- Scientific publication/bibliographic information

An effort should be made to review and use or adapt the various systems that already exist for each of these types of information.

b. The group also suggested that the Networks issue be addressed as an independent topic. They therefore added a point 6 - Network and Forum - with the following sub-items:

- Explore existing forums

- Current Research Networks

- Build a discussion forum

c. With respect to the second point, the group suggested the development of a project to avail Expert System tools on the Web.

d. Regarding the third point, which addressed a gateway function, the group stressed that information systems at the national level should be developed and strengthened so as to provide resources on top of which a gateway function would be useful. A gateway then, would be a search engine that would be capable of searching these distributed resources.

e. Regarding the fifth point, the group stated that for the RAIS steering committee as well as for each NINP, the terms of reference should be: 1) follow up on the recommendations of the workshop, 2) prepare a relevant action plan, 3) ensure timely delivery of the planned activities, and 4) report to the AARINENA Executive Committee, which meets every 6 months.

22. Group 2, came up with the following recommendations:

a. With respect to the first four points, the group suggested the development of the following articulation for a comprehensive set of collaborative programs as top priority:

- An institutional information database

- An expert and research project information database

- A virtual library

- A question/answer component

- Electronic forums at a regional level

b. Regarding the fifth point, they suggested that the terms of reference of a RAIS steering committee are: 1) have: a 2-year period, 2) its duties would focus on planning, and monitoring the implementation of the collaborative programs, and 3) ensuring regional balance in its formation.

**Discussion on Future Collaboration Programs with NARS and Recommendations**

23. The workshop participants:

a) Endorsed the "*Proposal for regional agricultural information system for WANA Region*", prepared by AARINENA, in April 2001, as a relevant regional framework for actions;

b) Recommended defining an articulated set of collaborative programs consistent with this regional framework. These collaborative programs can be seen as different modules, their later integration would constitute the future RAIS;

c) Recommended that these collaborative programs (i) would be led by the NARS, each acting as a leader for a specific collaborative program and (ii) would involve NARS,

regional organizations, international centers or Agencies as a common platform making use of the available expertise;

d)  Recommended that these collaborative programs would be define through a specific plan of work and budget, systematically including (i) a content generation component and, (ii) a training component;

e)  Recommended that these collaborative programs would adopt methodologies and tool kits already available for agricultural information management, or when necessary, would customize or develop such tools and methodologies;

f)  Recommended that the information contents would be made available in local language, or whenever possible, local language and English or French according to the various sub-regions of AARINENA;

g)  Recommended that AARINENA Executive Secretariat would seek for catalytic funds in order to achieve the definition and the launching of these collaborative programs. For this purpose, Regional and international Organizations could play a significant role;

h)  Recommended the launching of a AARINENA-RAIS Steering committee, which would deal with the following issues: (i) facilitate the management of an articulated and consistent set of collaborative programs leading to a three-years plan of work, (ii) monitor and evaluate the activities undertaken within this plan of work, (iii) ensure that there is a timely delivery of the expected outcomes of the collaborative programs, (iv) facilitate the communication between all the stakeholders involved in these activities, and (v) report to the AARINENA executive Committee, (vi) this AARINENA-RAIS Steering committee, consisting of information technology and information management specialists would be nominated for a three-year period, consistently with a sub-regional balance and personal and institutional commitment of its members, (vii) Associate Members of this AARINENA-RAIS Steering Committee would involve sponsors and partners;

i)  Recommended that AARINENA Executive Secretariat, in consultation with FAO and GFAR explore possibilities to assign a scientific assistant in charge of the Information and Communication Management (ICM) activities within the Secretariat;

j)  Recommended the following frame for the collaborative programs:

❏  Enhancing management information systems at national level. That would include the following modules (a) management of institutional information, (b) management of research activities and research project information, (c) management of information on experts, and (d) management of information on research outputs,

❏  Launching of electronic forum of discussion enabling and fostering dialogues within and amongst all the stakeholders involved in agricultural research for development in the region,

❏  Launching of a question and answer service at the regional level,

❏  Establishment of a gateway function at the regional level facilitating accesses to information managed by NARS.

24. The AARINENA-RAIS Steering Committee is expected to draft and circulate a concept note related to these various collaborative programs.

**Selection of a Steering Committee**

21. Nominations for a steering committee were made by present representatives of each of the five sub-regions with the following results:

- From the Arab Peninsula, Kuwait was elected

- From the Mashreq, Jordan was elected

- From the Maghreb, Morocco was elected

- From the Nile Valley and the Red Sea, Egypt was elected

- From Wes/Central Asia, Iran was elected.

22. Elected representatives were asked to nominate and select a chair from amongst themselves and Egypt was elected.

23. FAO, ICARDA, GFAR, and AOAD were proposed to join the steering committee as associate members.

**Annex A: Agenda**

**Tuesday 25 February 2003**

| | | |
|---|---|---|
| 9:00 – 10:00 | Registration | |

<div align="center"><b>Opening Session</b></div>

| | | |
|---|---|---|
| 10:00 – 10:30 | Statement by the President of AARINENA | |
| | Statement by the Representative of GFAR | |
| | Statement by the Representative of ARC | |

<div align="center"><b>Status of Implementation of RAIS</b></div>

<div align="center"><i>Chairman: M. Khalifa</i></div>

| | | |
|---|---|---|
| 10:30 – 11:00 | Review of RAIS Strategy in WANA Region | A. Rafea |
| 11:00 – 11:30 | AARINENA-RAIS Web Site: Present Status and Future Perspective. | T. Ebrahimi |
| 11:30 – 12:00 | Coffee Break (Reception) | |

<div align="center"><b>Experiences of Regional & International Organizations</b></div>

<div align="center"><i>Chariman: M. El-Tamzini</i></div>

| | | |
|---|---|---|
| 12:00 – 12:30 | FAO/WAICENT: Strategy on strengthening agricultural research information systems | R. Portegies Zwart |
| 12:30 – 13:00 | GFAR Initiative on ICT and expectations from RAIS and NAIS | JF. Giovannetti F. Bonaiuti |
| 13:00 – 13:30 | ICARDA-MIS and future partnership with AARINENA-RAIS | N. Maliha |
| 13:30 – 15:00 | Lunch | |

<div align="center"><i>Chairman: N. Maliha</i></div>

| | | |
|---|---|---|
| 15:00-15:30 | ISNAR experiences in development of MIS with relevance to regional organizations | A. Maru |
| 15:30 - 16:00 | APAARI experiences in development of RAIS | S. Singh |
| 16:00 – 16:30 | ZADI/EIARD-InfoSys+ Experiences in development of Databases and Node XML. | M. Bernard H. Knipschild |
| 16:30 – 17:30 | Open discussion | |

**Wednsday 26 February 2003**

<div align="center">

**WORKING GROUPS**

**Status of Implementation of RAIS**

*Chairman: JF. Giovannetti*
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| | |
|---|---|
| 9:00-10:30 | Plenary meeting of ICT Experts from the 5 Sub Regions of AARINENA, |
| | and Election of a Reporter. |
| | Discussion on: |
| | - Subregional Strengthens and Weakneses |
| | - Subregional Needs and Answers |
| | - Expected Requirements for Their RAIS. |
| 10:30-11:00 | Coffee Break |

<div align="center">

*Chairman: A. Rafea*
</div>

| | |
|---|---|
| 11:00-13:00 and Future | Working group report from each sub region with regard to Present Status of ICT |
| | Coordination with AARINENA-RAIS ** |
| 13:00-14:30 | Lunch |
| 14:30-16:30 | Working Groups *(cont.)* |
| 16:30-17:30 | Discussion (Plenary Session) |

**Thursday 27 February 2003**

<div align="center">

**Review of the RAIS Requirements, Strategy & Implementation Plan**

*Chairman: A. Fardous*
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| | |
|---|---|
| 9:00 – 9:30 | National Information Nodal Points: Terms of Reference, Selection of NINPs |
| | (NARS/Sub-Region) |
| 9:30-10:00 | Selection of AARINENA-RAIS Steering Committee |
| 10:00-10:30 Centers | Discussion on Future Partnership with International and Regional Organizations / |
| 10:30-11:00 | Coffee Break |
| 11:00-12:00 | Discussion of AARINENA-RAIS and Approval of Workplan 2003-2004 |
| | (Financial Needs, Future Programmes, Collaboration and Contribution |
| | from Partners and Donors) |
| 12:00-13:00 | AARINENA-RAIS Steering Committee Meeting |
| 13:00 – 14:00 | Lunch |
| 14:00 - | Local Tour |

** 20 minutes allocated for each status report.

**Annex B: List of participants**

| No. | Name | Tel., Fax. and Email |
|---|---|---|
| 1 | Mr. Abdel Naby Fardous,<br>President, AARINENA<br>Amman, Jordan | Tel: 00962-6-4725017<br>Fax: 00962-6-4726009<br>e.mail: fardous@ncartt.gov.jo |
| 2 | Mr. Ibrahim Y. Hamdan<br>Interim Executive Secretary, AARINENA<br>31 Road 206, # 602, Digla-Maadi, Cairo, Egypt | Tel : 202-5166605<br>Fax : 202-7495981<br>e.mail: Ihamdan@link.net |
| 3 | Mr. Raed F. Hattar<br>Chief of Agricultural Information Division<br>AOAD, Khartoum , Sudan | Tel: 00249 472176 83<br>e-mail: read hattar@aoad.org |
| 4 | Mr. Sahdev Singh, PhD<br>Assistant Executive Secretary<br>Asia-Pacific Association of Agricultural Research Institutions (APAARI), Maliwan Mansion, 39 Phra Atit Road, Bangkok 10200, THAILAND | Tel: (+662) 697-4372, 4371<br>Fax: (+662) 697-4408<br>e-mail: ssingh@apaari.org |
| 5 | Mr. Dirk Pottier<br>DG Research-European Commission , INCO programmer<br>EUROPEAN COMMISSION | Tel.:0032 2 2967209<br>Fax.:0032 2 2966252<br>e-mial:Dirk.Pottier@cec.eu.int |
| 6 | Mr. Marc Bernard<br>EIARD-Infosys+ Coordinator<br>ZADI, Bonn, Germany | Tel.: +49 228 9548203<br>Fax.:+49 228 9548111<br>Bernard@zadi.de or<br>.mail:bernard@isicad.org |
| 7 | Mr. Henning Knipschild<br>EIARD-Infosys+ Technical Coordinator<br>ZADI, Bonn, Germany | Tel.:0228 9548130<br>Fax.:0228 9548111<br>e.mail: hk@zadi.de |
| 8 | Mr. Mohamed El Tamzini<br>Agro-Industries & Technology Officer<br>FAO Regional Office for the Near East, RNE, Cairo – Egypt | Tel: 202-3316000/3351026<br>Fax.:7495981<br>e.mail: Eltamzini.Mohamed@fao.org |
| 9 | Mr. Robert Portegies Zwart<br>Information Systems Officer<br>World Agricultural Information Centre (WAICENT), (FAO)<br>Viale delle Terme di Caracalla, 00100 Rome, Italy | Tel: +39-06-570-54347<br>Fax: +39-06-570-54049<br>e.mail:Robert.PortegiesZwart@fao.org<br>website: www.fao.org |
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| 11 | Mr. Jean-François Giovannetti<br>GFAR Secretariat<br>Visiting senior Expert | Tel: +39.06.57.05.56.98<br>Fax: +39.06.57.05.38.98<br>e.mail<br>1:jeanfrancois.giovannetti@fao.org<br>e.mail 2: j.giovannetti@cgiar.org<br>Website: www.egfar.org |
| 12 | Ms. Fulvia Bonaiuti<br>APO Information and Communication System for ARD, GFAR Secretariat<br>FAO, Viale delle Terme di Caracalla, Rome, Italy 00100 | Tel. (39) 06- 5705-3584<br>Fax. (39) 06-5705-3898<br>e.mail: Fulvia.Bonaiuti@fao.org<br>Website: www.egfar.org |
| 13 | Mr. Nihad Maliha, PhD,<br>Manager, LIS,<br>ICARDA, Aleppo, Syria | Tel.:+963 21 2213433<br>Fax.:+ 963 21 2213490<br>e.mail: n.maliha@cgiar.org |

| | | |
|---|---|---|
| 14 | Dr. Ajit Maru<br>Research Officer (Information)<br>International Service for National Agri. Research, Laan Van Nieuw Oost Indie 133, Post: P.O. Box 93375, 2509 AJ<br>The Hague, The Netherlands | Tel: 31 70 349 6154<br>Fax: 31 70 381 9677<br>Res.: 31 71 5622 413<br>e.mail: a.maru@cgiar.org;<br>a.maru@planet.nl |
| 15 | Mr. George Adamides<br>Agricultural Information Systems<br>Agricultural Research Institute of Cyprus. | Tel.: 357 22 403133<br>Fax.: 357 22 316770<br>e-mail: adamides@arinet.ari.gov.cy |
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| 21 | Mr. Abdel Aziz AL-Louzi<br>Director of Information and Computer<br>C/O NCARTT, C/O UNDP Jordan | Tel.: 9962 6 4725071<br>Fax.: 962 6 4726099<br>e.mail: louzi@ncartt.gov.jo |
| 22 | Mrs. Tahani Hussain<br>KISR, Kuwiat | e.mail: **thussain@kisr.edu.kw** |
| 23 | Mr. Robert Kalaily<br>Network Administrator and IT manager of LARI<br>Lebanese Agricultural Research Institute, LARI , TalAmara/Bekaa/Lebanon | Tel.:009613802585Mobile. 00961 8 900037 (work)<br>Fax.: 00961 8 900077<br>e.mail: rkalaily@lari.gov.lb |
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| 26 | Mr. Babo Fadlalla<br>Director, Information & Documentation<br>Agricultural Research Corporation (ARC),<br>P.O.Box 30, Khartoum, North Sudan, | Tel.:249 13 313912<br>Fax.: 249 13 310813<br>e.mail: babo_f@yahoo.com |
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| 28 | Mr. Mohamed Noaman Sallam<br>Director of Extension Pragrammes and Projects<br>Agricultural Research & Extension<br>Authority, (AREA), Ministry of Agriculture,<br>P.O.Box: 87418 , Dhamar, Yemen | Tel: 00967 6-509413<br>Fax: 00967 6 500766<br>e.mail:area@yemen.net.ye<br>Sallam1958@yahoo.com |
| --- | --- | --- |
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**Annex C: Issues to be addressed by working groups**

1. **Databases included in the Management Information System: (database on national institutions, on research networks, full text scientific publications)**

   - Starting from stakeholders requirements prioritize the development of(a) bibliographic, (b)Institutional Information, (c) Research Projects information (d) Networks and (e) Experts

   - Define specific objectives

   - Propose an implementation process and identify possible leadership by national institutions or regional organizations

   - Define collaborative programmes involving stakeholders from all the regions and define a specific related funding strategy

   - Define the specific training

   - Define the specific action plan to strengthen communication among stakeholders

2. **Expert system included in the Regional Reference System**

   - Starting from stakeholders requirements prioritize the development of (a) Expert System and (b) GIS.

   - Define specific objectives,

   - Propose an implementation process and identify possible leadership by national institutions or regional organizations

   - Define collaborative programmes involving stakeholders from all the regions and define a specific related funding strategy

   - Define the specific training

   - Define the specific action plant to strengthen communication among stakeholders

3. **Gateway function (allowing access to material and resources through a single access point such a website) to be developed on the AARINENA RAIS website**

   - Define specific objectives to this gateway function

   - Define the collaborative programmes enabling implementation and involvement of NINPs

   - Define specific training and related policy communication

4. **Rural nodes to improve communication and dialogue between researchers, extentionists and farmers**

   - Assessment of the VERCON Programme in Egypt

   - Interest and commitment from other countries

   - Collaborative programme with F AO for a sub-regional platform for the VERCON programme

5. **Clarify Vision, Mission and Goals of AARINENA RAIS and Strengthening its constituencies**

   - TORs for AARINENA RAIS Steering Committee

   - Formalization of the role of the NINPs

   - Monitoring and reporting activities towards AARINENA Executive Committee

# APARIS Workshop

## 1-3 December 2003

## Bangkok, Thailand


## BACKGROUND

Enhanced information exchange among the Asia-Pacific national agricultural research systems (NARS) is one of the primary objectives of the Asia-Pacific Association of Agricultural Research Institutions (APAARI). In the early years of APAARI inception (1991-1995), also the pre-internet era, print publications were the primary medium of information dissemination. In 1995, APAARI prepared its Perspective Plan that emphasized the use of newly emerging technologies to further improve information management in NARS. Following the publication of the Perspective Plan, internet and digital technologies were identified as tools that can play a significant role in facilitating information networking among member NARS and other stakeholders. Subsequent General Assemblies (1996 and 1998) further stressed on effective use of ICT for information management. Consequently, APAARI with ACIAR support appointed an Information Technology Manager at its secretariat who established the initial APAARI web site in 1999 and several APAARI publications were put on it. A compact disk (CD) containing 17 APAARI Success Stories was developed and distributed widely to serve those who lacked fast internet access. Efforts to establish research databases were initiated with significant contributions from National Information Nodal Points (NINPs) in the Asia-Pacific region. To take the ICT initiative further, in November 2000 and October 2002, APAARI organized expert consultations on development of Asia-Pacific Agricultural Research Information System (APARIS). These consultations, attended by NINPs, representatives of APAARI members and stakeholder organizations, enabled APARIS to evolve from a simple concept into a basic framework of information resources for agricultural research for development (ARD), made available through APAARI web site. Keeping these developments in view, the present expert consultation was organized, with partial financial support from GFAR under the Global-RAIS initiative, to take stock of the situation and identify new activities to build capacity at the NINP level for further promotion of ICT in ARD and explore opportunities that exist to strengthen APARIS.

For the past several years, APAARI has been promoting various regional research networks for research information and material sharing among the ARD stakeholders. Concurrently with the ICT expert consultation, the coordinators of these networks were invited to present status reports and develop recommendations for further strengthening research networking in the region in a parallel session.

Following the recommendations of earlier meetings, a special session also discussed the issues related to the establishment of Asia-Pacific Consortium on Agricultural Biotechnology (APCoAB), a new initiative of APAARI in collaboration with Asia-Pacific NARS, FAO, GFAR, ISNAR, and several other international and regional entities representing foundations, NGO's, and the private sector.

The Expert Consultations on Strengthening Regional Agricultural Information System: Role of ICT in ARD and Status of Regional Research Networks and Consortia were held from 1-3 December 2003 at the Asian Institute of Technology, Bangkok, Thailand according to the program given as Annexure-I and were attended by participants listed in Annexure-II. There were about seventy participants from member NARS, associate member institutions and other regional and international organizations. Also there were representatives from other regional fora such as AARINENA and FARA. Some special invitees also participated in these consultations.


## INAUGURAL SESSION

Dr. Nurul Alam, Vice Chairman, APAARI initiated the inaugural session by welcoming the participants. Prof. Mario Tabucanon, Provost of AIT also welcomed all the participants and thanked

APAARI for choosing AIT as the host institution for the expert consultations. Dr. Raj Paroda, Executive Secretary of APAARI presented the objectives of the expert consultations and welcomed dignitaries including Dr. Mutsuo Iwamoto, Chairman of APAARI; Dr. Mohammad Roozitalab, Chairman of GFAR; Mr. Hiroyuki Konuma, FAO Deputy Regional Representative for Asia and the Pacific; Prof. Mario Tabucanon, Provost of AIT; Dr. Nural Alam, Vice-Chairman of APAARI; Dr. Jean-Francois Giovannetti, Senior ICT Expert of GFAR; and Heads of NARS and CG Centers.

Dr. Paroda informed that APARIS and APCoAB were the two major initiatives being taken up by APAARI as they strategically focus on two rapidly emerging technologies, information and biotechnology, both having immense potential to transform agriculture in favor of the resource-poor farmers of the region. He appreciated and thanked for the partnerships of FAO, GFAR, CGIAR institutes and other organizations with APAARI and hoped that the present consultation will result in defining a collaborative action plan, also involving various member NARS, to build capacity at the NINP level for further promotion of ICT in ARD in the region. He stressed the need for NARS to examine and revise their information and communication management (ICM) models to harness the benefits offered by new IT tools and techniques. He added that the other important objectives of the expert consultation were to review the progress of various research networks presently under operation and also to explore the possibilities of establishing a Consortium on Agricultural Biotechnology (APCoAB) to ensure that the needed benefits from new sciences reach the society.

Dr. Mohammad Roozitalab, Chairman of GFAR, in his special remarks recognized the progress made by APAARI in developing a regional agricultural information system that could potentially serve as an example for some other regions. He reiterated GFAR's support to all regional forums for developing such systems and urged all regional forums to work together in evolving a global agricultural information system.

On behalf of the Assistant Director-General and Regional Representative for Asia and the Pacific of FAO, Mr. Hiroyuki Konuma, FAO Deputy Regional Representative for Asia and the Pacific in his special remarks cautioned that the opportunities offered by new information and communication technologies (ICTs) have yet to reach the majority of potential users in the world due to increased disparity between users who have the means to access information and those who do not such facilities. He introduced FAO's initiatives such as WAICENT and AGRIS programs and called for greater use of these tools by NARS. He praised APAARI's efforts and assured continued FAO-RAP support for APARIS and APCoAB initiatives.

Dr. Jean-Francois Giovannetti, Senior Expert of GFAR, remarked that GFAR is working with all regional forums to find commonalities and to build on agricultural information systems for ARD using inter-regional synergies. He emphasized the need for closer look at information and communication management in NARS as well as regional forums.

Dr. Paroda invited Dr. Mutsuo Iwamoto, Chairman of APAARI to release the publication of recently revised APAARI Constitution and Mr. Hiroyuki Konuma, FAO Deputy Regional Representative for Asia and the Pacific to release the publication of Success Story on Control of Newcastle Disease in Village Chickens, the nineteenth in the popular series by APAARI.

Dr. Mutsuo Iwamoto, Chairman of APAARI delivered the Chairman's address in which he welcomed all the participants and thanked FAO for providing a base for APAARI at its regional office in Bangkok and acknowledged AIT for providing excellent facilities for the expert consultation. He hoped for more active cooperation from all partners so that APAARI can continue to strive hard for fostering regional cooperation through various networks and consortia for ARD. He stated that increasing agricultural productivity, while conserving natural resources and reducing the cost on input use, is a major challenge and biotechnology offers tremendous opportunity in this context. He concluded his address with a call for valuable inputs and support of all participating organizations to APAARI for further strengthening APARIS and APCoAB.

Mr. Somchai Charnnarongkul, Deputy Director General, Department of Agriculture, the Royal Government of Thailand, read the speech of H.E. Mr. Newin Chidchop, Deputy Minister for Agriculture and Cooperatives, the Royal Government of Thailand, who could not attend the inaugural session due to other out-of-town commitments.

Mr. P. K. Saha, FAO Liaison Officer for APAARI, delivered the vote of thanks for the participants and the organizers.


## Session I: Global and Regional Initiatives for ICT in ARD

*Chairperson: Dr. Behzad Ghareyazie, Former Deputy Minster for Agriculture, Iran*
*Co-chairperson: Prof. H.P.M. Gunasena, Executive Director, CARP*


## A Global Agenda for ICT in ARD

*Dr. Jean-François Giovannetti, Senior Expert, GFAR*

The GLOBAL RAIS initiative of GFAR and its activities were explained. Under this initiative GFAR will partially support a series of five regional and one inter-regional workshops/consultations in order to develop a global agenda for ICM in ARD. Lessons learned so far through this exercise included: identification of information providers/users in a global network of information reservoirs, decentralized nature of information production/management, and essential components of a RAIS such as a relational database of institutions, experts, projects/activities and events. The need for a regional information gateway was identified as a clearing-house function and also value addition in the RAIS at the regional level.

## Status Report on APARIS

*Dr. Sahdev Singh, Assistant Executive Secretary, APAARI*

The background, development phases, challenges encountered, and current activities of APARIS were presented. The role of NINPs in the development of APARIS was highlighted and their continuous involvement was shown to be critical to its functioning. More active intervention of the APARIS Steering Committee was sought to guide and monitor the development of APARIS. The current activities and value additions in APARIS were described. It was emphasized that APARIS, being one of the first few relatively well-structured regional systems, offered a significant learning value to other upcoming regional systems, particularly the participatory approach adopted in its development. APARIS experience thus need to be shared by other regions.

## Review of RAIS Strategy in WANA Region

*Dr. Ahmed Rafea, AARINENA*

The historical background, framework of action to develop the WANA/RAIS on the national and regional levels, implementation plan, collaborative programs, implementation priorities, the project proposal to implement phase one of the plan, and the current status of the AARINENA-RAIS were discussed. Planning of AARINENA-RAIS began in 2000 and its activities accelerated after the GFAR-supported RAIS Workshop in February 2003. Currently a need-assessment is being carried out at national level under phase one of the action plan approved by the Steering Committee in July 2003.

## FARA's Role in Strengthening Regional ICT

*Ms. Myra Wopereis-Pura, FARA*

Brief background on FARA, Africa's ICT on AR4D, progress on ICT in Africa's AR4D, and FARA's approach to ICT were briefly presented. Since the FARA-RAIS is still in its planning stages, the need for greater cooperation from other regional RAIS and international organizations was considered important. GFAR-supported RAIS Workshop for the FARA region is planned for the early part of 2004.

**Session II: NARS Status Reports**

*Chairperson: Dr. Ashraf Tanvir, Director Scientific Information, PARC*
*Co-chairperson: Dr. Paul Teng, Deputy Director General, The World Fish Center*


**BARC, Bangladesh**

*Mr. Mostaque Ahmed, Principal Librarian, BARC*

General information about Bangladesh agriculture and government's ICT policy was presented. Proposed initiatives include utilization of ICT in agro-based industry, information dissemination on agricultural technology, agribusiness development, and database on agricultural information. The web sites of research institutes operating under BARC, and SAIC information resources were demonstrated.

**ICAR, India**

*Dr. A. K. Jain, Assistant Director General (ARIS), ICAR*

A comprehensive presentation on ICAR's ARIS was made. Its development strategy, components, and impact were elaborated upon. Various databases developed under ARIS were listed. ICAR's efforts on computerization of its major activities and networking of various research institutes, universities, and extension services operating under ICAR were found to be increasing the use of e-mail communication and electronic documentation among the ARD professionals.

**AREO, Iran**

*Ms. Aisel Gharedaghli, Computer & Networking Administrator, AREO*

Government's ICT policy was explained in general. Agricultural Scientific & Documentation Center (ASDC) was identified as the main agency offering scientific services to agricultural institutes and universities using internet and intranet.

**NARC, Nepal**

*Mr. Bhola Man Singh Basnet, Chief of Communication, Publication & Documentation Division, NARC*

Due to unique geography of Nepal, the physical networking of various research institutes and stations was cited as the main obstacle for wider application of internet-based communication mechanisms. However, NARC is working on alternative ways of communication such as agriculture-oriented TV and Radio programs and CD publications.

**CARP, Sri Lanka**

*Prof. H.P.M. Gunasena, Executive Director, CARP*

Under the new agricultural research policy of CARP, several initiative to promote ICT in ARD have been undertaken. Individual institutes have developed their own web sites and work is under progress on electronic bibliographic databases, scientific personnel database, and electronic documentation of contract research abstracts for the period 1990-2000.

**PCARRD, Philippines**

*Dr. Patricio S. Faylon, Executive Director, PCARRD*

PCARRD's ICT program components supporting R&D management, technology management, capability building, policy advocacy and awareness; commodity information network; e-governance; open academy for Philippine agriculture; and e-Libraries were demonstrated.

**MARDI, Malaysia**

*Dr. Kamarudin Saadan, Director, Information Resources Management Division, MARDI*

Knowledge-based agriculture is the main thrust of new agriculture policy of the government and dissemination of vast amount of research information to all stakeholders is considered the main challenge. The e-commerce initiatives in the agriculture sector were the main highlight of the presentation.

**Session II (contd…): NARS Status Reports**
*Chairperson: Dr. R.N. Sapkota, Executive Director, NARC*
*Co-chairperson: Dr. William Padolina, Deputy Director General, IRRI*

**JIRCAS, Japan**

*Prof. Seishi Ninomiya, National Agriculture Research Organization*

Technical aspects of developing agricultural information systems illustrated through relevant examples from Japanese agriculture were discussed. Suggested key points for a RAIS included: efficient data collection, avoidance of dead storage of data, efficient data sharing and utilization through a Distributed Data Grid, multilingual information exchange, effective knowledge management, user-friendly system, linkage to e-business, and easy maintenance and cost reduction.

**PARC, Pakistan**

*Dr. Ashraf Tanvir, Director Scientific Information, PARC*

General information about Pakistan agriculture and agriculture-related web sites developed by PARC institutes/universities were presented. A list of databases offered by PARC was also provided and current emphasis on "virtual library" concept was highlighted.

**RDA, Republic of Korea**

*Dr. Keun-Seop Shim, Senior Researcher, Informatics Division, RDA*

The Urban-Rural digital divide was analyzed using various parameters. RDA's multi-pronged ICT strategy includes: bioinformatics, precision agriculture and mechatronics, e-AgCommerce, cyber extension and education system. Need for greater cooperation among regional NARS for the promotion of information sharing was discussed.

**COA, Taiwan**

*Ms. Jane Lin, Chief of Information Management, COA*

Promoting the computerization of agricultural wholesale market, network covering farmers' organization, information portals on food safety, and ICT capacity building at the farm level were presented as salient features of e-agriculture initiative of COA.

**DOA, Thailand**

*Mr. Somchai Charnnarongkul, Deputy Director-General, DOA*

The components of three-year master plan of DOA were presented. The plan puts emphasis on R&D for crops to enhance commercial competitiveness, food security and safety, and basic and applied R&D in agriculture.

**IAC, New Caledonia**

*Mr. Thierry Mennesson, Director General, IAC*

General information about telecommunication infrastructure of New Caledonia and IAC's web site (available in French) were presented.

**MARD, Vietnam**

*Dr. Nguyen Van Bo, Director General, Department of Science, Technology & Product Quality, MARD*

MARD web site (available in Vietnamese) provides information on research system organization, agricultural scientists, research projects and results, S&T publications, advanced technologies, and national and ministerial standards. Challenges facing ICT in Vietnam ARD were discussed.

**MAFF, Western Samoa**

*Mr. Matalavea Siaosi, Principal Research Officer, MAFF*

ICT in ARD is in early stages of development in Western Samoa, an isolated Pacific Island country.

**Discussion**

Session Chair invited comments on NARS Status Reports presented in Session II from Dr. Paroda and Dr. Giovannetti. Dr. Paroda congratulated the NINPs and NARS leaders for their informative presentations on status of ICT in their respective NARS and felt that these would serve a meaningful purpose in identifying strengths and weaknesses in the current implementation strategies for ICT/ICM in ARD. He urged NARS leaders to be more supportive of ICT initiatives and NINPs to be proactive as strengthened information exchanges both within and among the NARS of the region will benefit all the stakeholders. He also informed that the status reports prepared by NINPs of member NARS would help APAARI for the upcoming publication entitled "Role of ICT in ARD: Status and Progress in the Asia-Pacific Region." The publication is under preparation with support from FAO-RAP and ISNAR and due to be out in 2004. Dr. Giovannetti remarked that presentations reflected a healthy portfolio of information on ICT/ICM in NARS of the Asia-Pacific Region and considered it as a necessary exercise for further articulating a global agenda on ICM in ARD.

**Session III: Demonstrations on Existing ICT Opportunities**
*Chairperson: Prof. Gajendra Singh, AIT*
*Co-chairperson: Dr. Jean-Francois Giovannetti, GFAR*

**FAO ICM Models and Tools**

*Mr. Michael Riggs, FAO-RAP*

FAO's strategic framework for agricultural information management and dissemination through World Agricultural Information Centre (WAICENT) was outlined. WAICENT enables member nations to access agricultural information essential for reducing poverty, achieving food security and sustainable rural development. WAICENT acts as a clearing-house for information, establishes norms and methodologies for quality; develops standard categorization schemes; implements metadata for efficient storage, dissemination, search and retrieval. WAICENT also provides an intergovernmental forum for members and outreach for agricultural development, food security and capacity building through transfer of best practices in information management systems and tools development to national and international information providers. FAO's AGRIS, IMARK, VERCON, Virtual Library, and various capacity building programs were also introduced.

**ICT-KM Program of the CGIAR**

*Ms. Enrica Porcari, CGIAR*

CGIAR's vision for the next five years, which revolves around greater use of ICT in knowledge management, was presented. CGIAR envisions to be an organization without boundaries, a leading provider of educational content, one of the most authoritative and highly visible information sources on international agricultural issues, an internationally distributed but unified Knowledge Organization, an essential partner in collaborative international agricultural research by allowing all staff to have

access to high capacity computing and communication. The main projects and thrusts to achieve these objectives are ICT for Tomorrow's Science, Content for Development, and a CGIAR without Boundaries.

## ISNAR ICM Models and Tools

*Dr. Ajit Maru, ISNAR*

ISNAR's information resources, available in English, French and Spanish, are classified as Products and Services, which are delivered through printed and digital media. These resources, including Databases, Catalogues, Indexes, Search Engines, Archives, and a Virtual Library, cover a wide range of topics relevant to NARS. ISNAR also offers capacity building support to NARS through training programs and materials.

## Virtual Academy for Semi-Arid Tropics (VASAT)

*Dr. V. Balaji, ICRISAT*

The VASAT is a strategic coalition of partners with dry land farm communities and intermediaries as its core focus. The coalition includes international agricultural research centers, advanced research institutes, national open universities, national agriculture and extension systems, international development organizations, civil society organizations and community-based groups. It aims to mobilize communities and intermediaries of the dry tropics by sharing information, knowledge and skills related to climate literacy, drought preparedness, and best practices in dry land agriculture and other relevant issues. VASAT does this through an innovative interface of ICTs and distance learning. VASAT's main focus is creating demand-driven content that can be easily utilized by rural communities and intermediaries; content that balances generic and location-specific information. The ultimate goal is to convert scientific know-how into field-level do-how.

## APAN Agricultural Working Group

*Dr. Seishi Ninomiya, NARO*

Asia-Pacific Advanced Network (APAN) is a non-profit international consortium established on 3 June 1997 with a mission to prepare high performance network services for research and education and accelerate collaborations in the Asia-Pacific research and education communities. It holds a meeting twice a year. APAN projects and programs cover Agriculture, Fishery, Forestry, Earth Monitoring & Disaster Warning, Meteorology, Bioinformatics and Biotechnology, Biological Diversity and Ecology, etc. Current participants include institutions from Australia, Bangladesh, Canada, China, Japan, India, Indonesia, Korea, Malaysia, New Zealand, Philippines, Singapore, Thailand, USA, Vietnam, IRRI, APRTC, WMO, FAO. Asian Federation of Information Technology in Agriculture (AFITA), founded in 1998, was also introduced.

## Successful Global Research Databases: FishBase and ReefBase

*Dr. Paul Teng, The World Fish Center*

FishBase and ReefBase were developed with an objective to create awareness of fish and provide information on various aspects of fisheries and aquaculture. Database development process faced several issues such as governance and ownership, mobilizing resources for sustained development and operation, maintaining information current, and networking and access. It also addressed challenges of data and information explosion and quality.

## APRTC- A Distance Education Initiative for ARD

*Dr. Robert Raab, APRTC*

Using a framework of Global and Local Agricultural Knowledge Systems, Asia-Pacific Regional Technology Centre (APRTC), a non-profit organization headquartered in Bangkok, Thailand, focuses on promotion of sustainable agriculture and natural resource management through ICT-based eLearning programs (agLe@rn) to upgrade the skills and knowledge of farmers and agricultural professionals. APRTC's partners and collaborators include CropLife, WorldView International Foundation, IFDC - International Center for Soil Fertility and Agricultural Development, Tamil Nadu

Agricultural University, University of Agricultural Sciences – Coimbatore, G.B. Pant University of Agriculture and Technology, Pantnagar, and Punjab Agricultural University, Ludhiana of India, Asia Pacific Advanced Network (APAN), ITC's e-Choupal Initiative, Rockefeller Foundation, University of the Philippines, Los Banos, Kasetsart University of Thailand, ,and Japanese Ministry of Agriculture, Forestry and Fisheries Information Network (MAFFIN).

**AIT's ICT Capacity Building Programs**

*Dr. Charoon Chirapaisarnkul, Director, IT Unit, AIT Extension*

AIT is an international graduate institution of higher learning with a mission to develop highly qualified and committed professionals who will play a leading role in the sustainable development of the region and its integration into the global economy. It has trained over 4,000 individuals in the region through its ICT related short-term education and non-degree training programs. It offers state of the art facilities and international resource persons specializing in a wide variety of academic fields. AIT has been associated with APAARI for the past several years and this partnership will continue to work in areas of mutual interest.

**Private/NGO Initiatives in India**

*Mr. Sunil Khairnar, ISAP/AgriWatch.com*

Indian Society of Agribusiness Professionals (ISAP), is a non-governmental organization operating 83 Information Centres throughout India to address the information needs of farmers. About 125,000 farmers have also become its members and are getting the benefit of up-to-date information on agricultural markets, weather, and best practices. ISAP is a unique experiment and its outcome makes following recommendations for increasing ICT based private initiatives:

- The government extension department should accept that they cannot reach 0.6 million villages on their own. The governments (state and center) should play the role of the enabler by harnessing the experience and expertise gained by the existing initiatives.

- Most of the successful initiatives have a critical component in its chain – the village level entrepreneur who invests in and runs the kiosks from where the services are disseminated. The government could play a decisive role here by

  o Ensuring availability of space at strategic locations (e.g., regulated markets)

  o Digitizing all available content available with Public Research Agencies

- For all the e-governance related initiatives/ services, the administrative machinery at district level could play a key role by prioritizing the on-line conversion of as many services as possible and facilitating the usage of ICT delivery modes

- Providing Syndicated content from various govt. departments in the area of health, education and agriculture to the various initiatives on commercial terms

- Public Agencies should not compete with the services offered by small private entrepreneurs after they have launched their services at a particular location.

- Human Resource Training and Development on the lines of what is being executed by MANAGE in the context of Agri-clinics.


**Session IV: Group Discussions on APARIS**


This session was devoted to group discussions in the wider context of APARIS framework and functioning. Detailed guidelines and an APAARI working paper on APARIS were distributed to all the participants. Four groups, each focusing on one category of users, deliberated upon the following points:

1. Adequacy of APARIS framework to respond to this target audience.

2. New features/content/meta-content that could be added to APARIS to make it responsive to this target audience.

3. Role of NINPs: Features/content/ meta-content that NINPs can directly contribute to APARIS for this particular audience?

The groups were divided as follows:

**Group I**                                                    **Moderator**

ICT for Science & Technology Information                       Dr. Jean-François Giovannetti, GFAR

Dissemination (how to reach students/professionals)

Members: Robert Raab, Mostaque Ahmed, Kamaruddin Bin Saadan, Gajendra Singh, MV Gupta, Ahmed Rafea, Tjeppy Soedjana, AK Jain, Asharaf Tanvir, Faisal Taha, Nazmul Haq, Andrew Powell, Sahdev Singh

**Group II**

ICT Networks of ARD Professionals                             Dr. Ajit Maru, ISNAR

(how to reach ARD professionals)

Members: Mohammad Reza Moghim, Seishi Ninomiya, Ipul Powseu, Delia Delfino, Keun-Seop Shim, SMP Chandra Padmini, Jane Lin, LT Hong, Paul Teng, JS Sindhu, CLL Gowda, Fulvia Bonaiuti, Aisel Gharedaghli, Satoru Miyata, Kenichi Hito, Matalavea Siaosi, Sim Heok-Choh, Sherali Nurmatov, PK Saha, Enrica Porcari

**Group III**

Extension through ICT                                          Dr. Malcolm Hazelman, FAO-RAP

(how to reach farmers)

Members: Bhola Man Singh Basnet, Sunil Khairnar, V Balaji, Maria Luz, Simon Wilkinson, Kamlesh Prakash, Nicomedes P. Eleazar, Margaret Yoovatana, L. T. Hong, Erna M. Lokollo, Eric Johnson, Myra Wopereis-Pura, Khairuddin Tahir

**Group IV**

ICT in Research Policy Formulation                            Dr. R.D. Ghodake, PNG

(how to reach ARD institutions)

Members: Raj Paroda, Ragunath Sapkota, Thierry Mennesson, PS Faylon, HPM Gunasena, Somchai Channarongkul, Nguyen Van Bo, William Padolina, MH Roozitalab, M Nurul Alam, Mangala Rai, Mutsuo Iwamoto, Masaaki Suzuki, Adel El-Beltagy, William Dar, Mohmmad Hassan Al-Attar, Abdel Nabi Fardous, B. R. Barwale, Randy Hautea

**Session V: Recommendations of APARIS Discussion Groups**

*Chairperson: Dr. Mangala Rai, Director General, ICAR*
*Co-chairperson: Dr. P.S. Faylon, Executive Director, PCCARD*

The moderated discussions resulted in defining the essential components of an agricultural information system at national, sub-regional, regional, and global levels; information exchange protocols among different levels; set of activities to be performed at various levels to have a functioning regional agricultural research information system; tools/technologies needed/available to have such a system, or how existing ICT initiatives of other ARD organizations can also be integrated with APARIS; and nature and level of commitment from individual NARS participating in APARIS and APARIS support group organizations, including GFAR, ISNAR, ACIAR, AIT, other CG Institutes, and FAO. Each group presented the outcome of various discussions as follows:

**Group I: ICT for Science & Technology Information Dissemination**

The group considered promotion of regional capabilities through APARIS for e-learning to target undergraduate students, graduate students, non-degree students, instructors, and professionals. The identified information needs of this audience were access to existing national agricultural universities resources and access to existing e-learning resources at national and sub-regional levels. It was emphasized that APARIS stakeholders could help development of E-Course contents using English in the very beginning and translating these contents into local languages at a later stage. The potential of machine translation was also discussed.

APARIS could collect and/or update APARIS database related to universities and e-learning initiatives in the region, facilitate scaling up of successful e-learning initiatives, identify students and teachers demands for e-learning, develop guidelines for teachers to use APARIS in their courses, facilitate financial resources mobilization for developing and/or training on e–learning packages and technologies.

The suggested role of NINPs in this proposed initiative was to supply information to APAARI related to the universities, training institutes, and e-learning initiatives in the country, provide calendar of training events, and transfer of expertise of strong NINPS to other NINPS.

The group proposed the following action plan and the related means:

- Build an inventory of existing Agricultural Universities within the region
- Build an inventory of existing e-learning initiatives
- Work as a platform for identifying students, teachers and professional demands. This may be done through creating an e-forum on this subject and/or developing an on-line questionnaire
- Facilitate financial resources mobilization for developing and/or training on e–learning packages and technologies
- Facilitate e-learning technical packages identification

**Group II: ICT Networks of ARD Professionals**

The group agreed that ICT enables new forms of collaboration such as alliances, consortiums, on-line communities and networks of ARD professionals and the role of APARIS is primarily of intermediation with suitable value addition. The principles and frameworks for NAIS/RAIS/GAIS assume equity and homogeneity in contribution, availability, access, usefulness and relevance of information. This not the reality of the Asia-Pacific region. The parameters of inequity and heterogeneity must be considered for the success of APARIS.

*Discussion point 1: Is APARIS Logical framework (2000) adequate to respond to this target audience?*

No, it is inadequate. The APARIS role requires cooperation and collaboration from its members. The framework does not include this vital role. APARIS is to intermediate information sharing and exchange between its Institutional members and has to add value to the information shared and exchanged to be useful in the intermediation process. The APARIS role is not only technological and in content sharing and exchange but of advocacy and in creating political will to use ICT to communicate and use agriculture related information effectively and efficiently among its members and their stakeholders in the Asia-Pacific Region. The suggestion put forward was that APAARI/APARIS should enable, foster and advocate collaboration, cooperation and coordination for effective and efficient agriculture related information flows in the Asia-Pacific region; capacity for information and communications management and content development; and capital investment in agricultural information systems at National, Regional and Global levels.

*Discussion point 2: What new features/content/meta content could be added to APARIS to make it responsive to this target audience?*

In addition to Institutes, Experts and Projects databases APARIS has to facilitate and mediate to foster cooperation in sharing and exchange of information on new technologies; access to Asian Scientific and Technical Information and "harvesting" of information not "hunting." It should represent its stakeholders to discuss, mediate and negotiate data exchange standards; create an information repository for SPF (Specific Pathogen Free) and similar standards for Asia-Pacific region; enable collaboration for geo-referenced, weather/climate data, expert systems, decision support systems and models in the Asia-Pacific region; and enable collaboration to utilize capacity within APAARI members to generate content for the region.

*Discussion point 3: What features/content/meta-content NINPs can directly contribute to APARIS for this particular audience?*

NINPs must have greater exposure within their systems as representatives of APARIS and need further support from their systems to enable sharing and exchange information through APARIS. With introduction of ICT, there are new information flows and new ways to manage content in the NARS. This needs new capacity within the NARS to restructure. APARIS has to examine how NARS can be enabled with these capacities. With regard to the commitment of APARIS support group, the group felt that there is commitment by representatives of members and stakeholders. However, there is a very serious issue of diminishing funds to support existing information systems and networks to maintain and renew them. APAARI must raise this issue at all stakeholder/donor events. There will be a need for a well documented brief on this issue.

## Group III: Extension through ICT

The discussion started with identification of farmers' information needs and ICT based delivery channels for meeting these needs. In this context, the group suggested that APARIS cannot address localized needs due to language specificity and resources. It should address needs related to experts, production and post harvest technology with a focus on national, regional and international issues. It can facilitate digitization and aggregation of content in usable formats. Further, it should study and share best practices across the region.

## Group IV: ICT in Research Policy Formulation

For agricultural policy formulation, planning and projection, R&D priority setting, and science & technology (S&T) management, the group identified information requirements, including macro level data, agricultural S&T indicators, social and environmental data. It was suggested that the information should be frequently updated, processed, formatted and summarized in a uniform language. APARIS could play a role of intermediary among NINPs (including Institutions), universities, ministries, statistical agencies, private sector and national and international agencies.

The group felt that the APARIS framework is adequate but requires more links and updating. It should have more information on research priorities at regional, sub-regional and national levels in a

standardized format. The group recommended strongly the need for nomination of one full-time person for APARIS in each member institution.

## Plenary Session – Strengthening APARIS

*Chairperson: Prof. Dr. Adel El-Beltagy, Director General, ICARDA*
*Co-chairperson: Dr. Raj Paroda, Executive Secretary, APAARI*

## Final Recommendations on Strengthening APARIS

Dr. Giovannetti presented a synthesis of the final recommendations emerging from four discussion groups, which are as follows:

- Agriculture is becoming more knowledge-intensive as it becomes more market-oriented in a globalized world. The use of ICT is vital for accelerated growth in this agriculture.

- In the Asia-Pacific region, there are several hot-spots of rural poverty (dominated by smallholders), information and knowledge sharing using conventional and new ICT together has great potential for improving agricultural productivity and alleviating poverty.

- APARIS, as a RAIS and regional information intermediary, and APAARI as a regional organization, have critical roles in improving the efficiency and effectiveness of information and knowledge flows related to agriculture in the Asia-Pacific region.

- Further enhance relations between NARS represented by NINPs and APARIS for greater collaboration in information exchange.

- Build capacities among NINPs in ICT/ICM.

- Improve APAARI's advocacy role in the area of ICM for ARD.

- Identify ICT indicators and status of the NARS and member institutes.

It was stressed that a draft action plan based on above recommendations be reviewed by APARIS Steering Committee and modified accordingly before submission to APAARI Executive Committee for endorsement and subsequent follow up. All participants endorsed the need for strengthening APARIS and desired to have action plan implemented through effective partnership of all NINPs and stakeholders.

## Concluding Remarks

Dr. Iwamoto, APAARI Chairman, was invited to offer his concluding remarks. He endorsed the recommendations made in the plenary session. He further informed that JIRCAS will consider ways to support APAARI's ICT initiative through APAN.

Dr. Paroda thanked all the participants for their active participation and inputs. He remarked that diverse participation is APAARI's strength and the present gathering is an evidence of that. He informed that APAARI has come a long way in its core initiatives on ICT, research networking, and agricultural biotechnology though a focused and collaborative approach. He hoped that APARIS Steering Committee and NINPs will be more active in future and the APAARI collaboration with NARS, ACIAR, JIRCAS, APAN, and CG Centers will be further strengthened in near future. He also thanked Dr. Iwamoto, the APAARI Chairman; Dr. Beltagy, the Session Chair; the NARS leaders; the heads of CG Centers present; AIT administration and staff, particularly Prof. Gajendra Singh; NINPs; invited participants; and the APAARI Secretariat staff.

Dr. Beltagy, in his concluding remarks stated that the participants have made significant contributions through their technical inputs. He suggested that the CG Centers will continue to work with NARS. He expressed satisfaction that the representatives from GFAR and other regional fora were also invited and presented their valuable inputs. He reiterated continued ICARDA support to APAARI in future.

Finally, Prof. Gajendra Singh thanked all the participants, his staff and APAARI members for making the meeting a success.

# CAC-RAIS Workshop

## 27-28 January 2004

## Tashkent, Uzbekistan

### Introduction

1.  The Meeting was sponsored by GFAR Secretariat, and managed by CACAARI, with the kind and effective support of CGIAR PFU in Tashkent.

2.  The final version of the agenda is attached in appendix A. Appendix B includes the modified list of participants.

### Opening Session

3.  Mr. M. Yusupov, First Deputy of the Minister of Agriculture and Water Management of Uzbekistan, conveyed to the attendees regards from the Uzbek Authorities. In his statement Mr. Yusupov stressed the importance of Information and Communication Technology (ICT) in Agricultural Research for Development (ARD) and the commitment of his Country to this fast growing technology.

4.  Dr. R. Paroda, Head CGIAR-PFU Program and Regional Coordinator of ICARDA in CAC, gave the statement in which he emphasized the vital role the RAIS can play in the CAC region.

5.  Dr. S. Nurmatov, Chairman of CAC Regional Forum, CACAARI, presented current ARD situation in the region. Taking into account the recent launching of the CAC Regional Forum, he underlined the expectations of the CACAARI stakeholders regarding the establishment of a Regional Agricultural Information System strengthening exchange of information within Central Asia and Caucasus.

6.  Dr. J. F. Giovannetti, GFAR Secretariat, presented the main outlines of the GFAR Business Plan and underlined the Information and Communication Management (ICM) component of this business plan, which aims at building up a global information and communication system for ARD. In his statement he mentioned that GFAR developed a web site to promote exchange of information within all the GFAR stakeholders and also supports the Global-RAIS initiative. He therefore mentioned that, after similar workshops in Western Asia and North Africa (WANA) and in Asia Pacific, this was the third regional consultation in a set of similar consultations that will be achieved at the beginning of June 2004. He underlined that the meeting was attended by AARINENA and APAARI colleagues, Pr. Ahmed Rafea and Dr. Sahdev Singh, in order to promote exchange of experience at an inter-regional level.

### Countries Status Reports

7.  Prior to the countries reports, Ms. Bonaiuti made a presentation, which focused on the Global-RAIS Initiative and EGFAR, the GFAR web site (http://www.egfar.org). Some of the important issues raised, included:

    *   The need to decentralize database implementation and management at a national level, and to support each country to build their information system through a compatible process enabling exchange of information through a gateway function at the regional level. She therefore underlined the key role played by the national focal points.

- The development of Management information tools for monitoring ARD activities, mainly dealing with information on: (a) institutions and stakeholder groups, (b) ongoing activities in ARD and, (c) expertise.

- The facilitation of access to knowledge, generated by agricultural research centers in the region.

8.   Mr. A. Manukyan then presented the objectives of the workshop. The agenda of the workshop also was approved, taking into account the remarks made by Dr. A. Ajibekov (Kyrgystan).

9. Dr. S. Nurmatov presented the country report for Uzbekistan, where he gave the current picture of Agriculture in Uzbekistan in general and particularly stressed the need of development of ICT/ICM related activities in his country.

10. Dr. A. Voskanyan presented the country report for Armenia. Some recent initiatives in ICM for ARD area were mentioned, including the cooperation with FAO, WB and DFID and the operation of AgroWeb network in Armenia. He also gave the picture of telecommunication services in Armenia.

11. Dr. O. Shatberashvili presented the country report for Georgia. He stressed the well-organized ICM system inside the country and the activities of TECHINFORMI in this field, including the managing role of AgroWeb Georgia portal, as well as its role in the management of scientific and technical information.

12. Dr. T. Koichumanova presented the country report for Kazakhstan. She underlined the strong support from the government side and the need of cooperation and knowledge exchange inside the region. As the Head of Scientific Agricultural Library, Dr. Koichumanova presented the cooperation with FAO in the field of ICT/ICM for ARD, and stressed the constraints of the development of AgroWeb Kazakhstan portal. Some information on prices of Internet connection was given as well.

13. Dr. A. Ajibekov presented the country report for Kyrgyzstan. He mentioned the favorable policy environment in Kyrgyzstan for the development of ICT in Agriculture. The activities of Institute of Innovation Technologies of Agrarian University, which is the focal point for AgroWeb Network in Kyrgyzstan, were presented. Dr. Ajibekov however stressed the poor connectivity in rural areas.

14. Dr. Z. Muminshoeva presented the country report for Tajikistan. She emphasized the poor situation with the development of ICT in Agriculture in Tajikistan and mentioned the very high price of the provided connection.

15. Dr. S. Salakhov presented the country report for Azerbaijan. He stressed the vital role of highly developed ICT/ICM sector in agriculture in the countries in transition to the market oriented economy. The poor situation concerning the exchange of information and knowledge between research institutions and end users was mentioned. AgroWeb Azerbaijan portal is not functioning effectively and the need of strengthening the Agroweb network was emphasized.

16. Dr. R. Paroda summarized the reports and stressed the more or less similar situation in all countries and the urgent need for developing an effective and efficient RAIS in CAC region as a common platform for communication and knowledge sharing inside the region.

17. During the general discussion following these country reports, the production of a regional synthesis was endorsed. This synthesis will take advantage of a common format, which was prepared by Dr. Giovannetti and Mr. Manukyan, for the presentation of all the national situations. The information will be collected directly from all the participants attending the Meeting.


### Experiences of Regional & International Organizations

18. Mr. S. Singh presented APAARI's experience in the development of RAIS, so called APARIS in Asia Pacific. During his presentation Mr. Singh underlined the role played by the Natioanal

Information Nodal Points in Asia Pacific (NINPs) and various information services offered by the APAARI web site within which the Regional Agricultural Expertise Locator (RAEL).

19. Pr. A. Rafea presented then the experience of AARINENA-RAIS.During his presentation, he detailed the concept of Management Information System (MIS) and the need to launch a modular approach. He then underlined the need to launch an "ad hoc" Committee to follow up and monitor the activities in this area of ICM. The main outcomes of the first AARINENA-RAIS Steering Committee Meeting, hosted by ICARDA in July 2003 were detailed.

20. These two presentations were achieved the first day, upon request of Dr. A. Ajibekov. Then the participants split in two working groups on the national agricultural information systems (NAIS), see below.

21. Ms. F. Bonaiuti presented during the morning of the second day, ZADI/EIARD-Infosys's experience in the development of three information systems: Alert, GroupWare and Node XML.

22. Mr. A. Manukyan presented the operation of AgroWeb Network in CAC region (at a regional level).

23. Mr. K. Umarov presented the AgroWeb Uzbekistan portal (at a national level).

24. Mr. A. Khojoyan presented the new initiative of AgroWeb Network in Armenia concerning establishment of AgroWeb region portals inside the country (at an intra-national level).

### Working Groups on National Agricultural Information Systems

25. General discussion on respective strengths and weaknesses of the NAIS was taken place after the status reports. Based on the issues raised throughout the first day, a number of points were identified for discussion by working groups. These were:

   - Current situation at the national (already existing networks, AgroWeb network, other facilitating services, lack of ICT services, internet connectivity constraints and other constraints, within which ICT skills).

   - Prioritizing key end users at the national level, and definition of the required information to address their needs

   - National priorities in the area of ICM for ARD.

26. The discussion sheet is in appendix C, was prepared accordingly by Dr. Giovannetti. Participants decided to work in two working groups divided by regions – Central Asia and Caucasus.

27. Mr. A. Khojoyan from Caucasus group presented the outcomes of their working group. He stressed the absence of any existing ICT based networks except the AgroWeb, which exists in all three countries of the Caucasus region. He also mentioned some initiatives in Armenia and Georgia. The main weaknesses are the lack of ICT/ICM skills, constraints in the connection to Internet, non-free access to the main web based resources, language barrier. He also stressed the need to be better focused on farmers' needs in the process of knowledge dissemination and exchange.

28. Dr. A. Ajibekov from Central Asia group presented the outcomes of their working group. He laid emphasis on skilled research community and the existence of AgroWeb network only in Kazakhstan, Kyrgyzstan and Uzbekistan. He also mentioned the lack of ICT and necessary skills in ICM. The constraints with the Internet connection were mentioned as well.

### Working Groups on RAIS Strategy for the CAC Region

29. Dr Giovannetti highlighted some of the important issues to be addressed for the further discussion on the RAIS Strategy:

- The objectives of RAIS for the CAC Region.

- Key end-users and main information requirements.

- Information and communication services to be provided by RAIS.

- Plan of Actions to establish a CAC-RAIS.

30. Attendees of the workshop were split into two groups and given the discussion sheet in appendix D for review. Each group contained members of similar regions.

31. Group "Caucasus", came up with the following recommendations related to the information and communication services to be provided by the CAC-RAIS:

exchange of knowledge and ICT tools;

capacity building activities;

access to the national web resources inside the CAC region with appropriate searching mechanisms;

exchange of ARD information on national, regional and interregional levels;

launching e-discussions on strategic issues of regional strategies;

access to RAIS from rural areas;

development of traditional ways of exchange of information;

three lingual platform for RAIS (national language, Russian and English);

Provided access to global ARD information;

creation of national databases of experts;

Electronic library.

32. Group "Central Asia", came up with the following recommendations related to the information and communication services to be provided by the CAC-RAIS:

exchange of ARD information on national, regional and inter-regional levels;

exchange of knowledge and ICT tools at regional and global levels;

capacity building activities in the area of ICM in ARD;

launching e-discussions on strategic issues of regional strategies in ARD;

creation of national databases of experts;

provided information of key players in ARD;

information on existing initiatives at national level;

e-library and e-publications;

question-answer services;

multilingual platform (national language, Russian and English)

access to global resources in ARD;

distance education for farmers;

online video-conferences;

Creation of multimedia resources and distribution via CD copies.

33. Regional Agricultural Information System (RAIS) Workshop for Central Asia and the Caucasus was held in Tashkent, Uzbekistan from 27-28 January 2004. The workshop was the first formal event organized by the recently established CAC Association of Agricultural Research Institutions (CACAARI). In all, 21 participants attended the workshop, including representatives of NARS, GFAR, Regional Fora (AARINENA and APAARI) and ICARDA. The participants deliberated on assessment of needs and priorities related to agricultural information system, at both national and regional levels, and developed the following strategy for future cooperation:

They recognized the need:

1. To be supported in their activities of agricultural information and communication management (ICM) through an active political commitment and an ICT policy effectively implemented at the national level;

2. To improve access to and articulation of their national information resources by enabling an enlarged access to global and regional ARD information through internet;

3. To promote sharing and exchange of information and knowledge in the area of agricultural research for development (ARD) at national, regional and inter-regional level;

4. To improve accessibility to all the national web resources available within the region, through compatible and standardized tools, mechanisms and data structures;

5. To promote access to national and regional information resources through multilingual platforms in Russian, English and national languages;

6. To enhance ICM & ICT knowledge of the stakeholders involved in ARD, both for the access to and the organization of web information resources.

They endorsed:

1. The establishment of a Regional Agricultural Information System in the CAC Region;

2. The need of a multi-stakeholder involvement to achieve effectively the national and regional information system in the area of ARD;

3. The need for national focal points in charge of improved articulation of the national web information resources, consistently with the requirements of the RAIS and its gateway function.

4. Agroweb is a relevant initiative enabling (i) the management of national information resources in agricultural research for development, (ii) a gateway function from the regional level facilitating the access to national resources and hence be strengthened further by contributions from each NARS.

Therefore they recommend:

1. To achieve a regional synthesis of all the national situations, initiatives and skills in the area of ICM & ICT for ARD;

2. To prepare a document on the CAC-RAIS strategy to be facilitated by the GFAR Secretariat, on the behalf of CACAARI;

3. To define a specific plan of work to strengthen the ICT activities and skills at a regional level;

4. To launch a RAIS Steering Committee, under the umbrella of the CAC regional forum, in charge of the general following functions: (i) stimulate exchange of information within the CAC countries, (ii) develop back stopping activities, (iii) follow up the activities in the area of agricultural ICM & ICT. The launching of this Steering Committee will be

facilitated by a temporary working group composed of the following members: Mr. Oleg Shatberashvili (Caucasus), Mrs. Asel Sadykova (Central Asia), Mr. Mirjamshid Murtalibov (CACAARI), Mrs. Ilona Kononenko (ICARDA), and Dr. Jean-François Giovannetti (GFAR Secretariat). They will draft and circulate the terms of reference of (i) the RAIS Steering Committee, (ii) the national focal points, and (iii) will follow the nomination process of the national members to the RAIS Steering Committee. The activities of this working group are expected to be completed by 1st March 2004.

**Appendix A: Agenda**

**08:30 - 09:00**     Registration

*Inaugural session*
*Chairperson: Dr. S. Nurmatov*
*Co-chairperson: Dr. Raj Paroda*

**09:00 - 10:00**     Welcome Addresses

- Statement by Mr. M. Yusupov, First Deputy of the Minister of Agriculture and Water Management of Uzbekistan,
- Statement by Dr. R. Paroda, Head, CGIAR-PFU Program and Regional Coordinator of ICARDA in CAC,
- Statement by Dr. S. Nurmatov, Chairman of CAC Regional Forum,
- Statement by Dr. J.-F. Giovannetti, GFAR Secretariat

**10:00 - 10.30**     Coffee Break and Group Photograph

*Session I: Country status Reports*
*Chairperson: Dr. Raj Paroda*
*Co-chairperson: Mr. Arman Manukyan*

**10:30 - 10:45**     Presentation of the Global-RAIS Initiative and EGFAR (Dr. J.-F. Giovannetti and Mrs. F. Bonaiuti)

**10:45 - 11:15**     Presentation of the objectives of the workshop and approval of the Agenda (Mr. A. Manukyan)

**11:15 - 12:45**     Country Reports: (15 mn. of presentation and 5 mn. of discussion)

- Uzbekistan (S. Nurmatov)
- Armenia (Dr. Ashot Vosranyan)
- Georgia (Dr. O. Shatberashvili)
- Kazakhstan (Dr. T. Koichumanova)

**12:45 - 13:45**     Lunch

**13:45 - 15:05**     Country Reports (contd.):

- Kyrgyzstan (Dr. A. Ajibekov)
- Tajikistan (Dr. Z. Muminshoeva)
- Azerbaijan (Dr. S. Salakhov)

Lessons learned from other Regional Fora:

- Presentation on APARIS (20 mn.)
- Presentation on AARINENA-RAIS (20 mn.)

**15:05 - 16:15**     General discussion on Strengths and weaknesses of the NAIS

| 16:15 - 16:30 | Coffee Break |
|---|---|

| 16:30 - 18:00 | Working Groups: the discussion should include (a) the definition of the priorities related to the establishment of NAIS in CAC, (b) the development of Information and Communication Management (ICM) related projects, (c) the development of fund raising and financial strategy and (d) the capacity building including support for hardware/software tools and human resources development). |
|---|---|

| 19:00 | Reception |
|---|---|

## Wednesday 28 January

*Session II: Establishment of CAC-RAIS*
*Chairperson: Dr. J.-F.Giovannetti*
*Co-chairperson: Prof. Ahmed Rafea*

| 08:30 - 09:00 | Presentation of the outcomes of the WGs by the " rapporteurs", general discussion on the national strategies |
|---|---|

| 09:00 - 09:40 | Lessons learned from other Regional Fora (Cntd): |
|---|---|

- Presentation on INFOSYS (20 mn.)
- Presentation of Agroweb (20 mn.)

| 09:40 - 09:55 | Presentation of the Regional report and next steps (Arman Manukyan) |
|---|---|

| 09:55 - 10:15 | Presentation of the guidelines for the Working Groups on the RAIS strategy, general discussion. |
|---|---|

| 10:15 - 10:30 | Coffee Break |
|---|---|

| 10:30 - 12:45 | Working Groups: |
|---|---|
| | The discussion will address the main following issues: (a) priorities setting for the information contents and communication tools of the CAC-RAIS Web site, (b) action plan for the implementation, role of the NINPS and human needs for the RAIS management within the CAC Secretariat, (c) financial needs, (d) specific capacity strengthening program, (e) setting up of a specific Steering Committee for the RAIS. |

| 12:45 - 13:45 | Lunch |
|---|---|

| 13:45 - 15:00 | Working Groups (contd.) |
|---|---|

*Session III: Plenary Session*
*Chairperson: Dr. S. Nurmatov*
*Co-chairperson: Dr. J.-F.Giovannetti*

| 15:00 - 15:30 | Presentation of the reports of the Working Groups and general discussion on the RAIS strategy for the CAC Region |
|---|---|

| 15:30 - 15:45 | Final Recommendations for adoption |
|---|---|

| 16:00 - 16:30 | Closure session and coffee break |
|---|---|

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**Appendix C: Guidelines for discussion: Working groups 1 on NAIS**

**Current situation at the national level**

- Strengths

Already existing networks

AgroWeb network in your country

Other facilitating services/Other initiatives in ICM

- Weaknesses

Lack of ICT skills

Internet access constraints

Other constraints
*Expected outputs*: Shared vision on national situation in all CAC countries

**Key end users at the national level**

- Prioritize the following stakeholder groups:

Research Centers and scientists

Private Sector

NGOs

Education

Farmer Organizations

Libraries and information Centers

Governmental Organizations

Other

- Key players in ARD

- Ongoing research and development activities

- Electronic documents and expertee.
*Expected outputs*: Key players in ARD

**National priorities**

- Better articulation of all your national information resources.

- Capacity building.

- Definition of national policies

- Regional collaboration

- Other
*Expected outputs*: Shared vision on national policies.

**Appendix D: Guidelines for discussion: Working groups 2 on RAIS strategy**

<u>**Objectives of the CAC-RAIS**</u>

- To promote exchange of information in ARD at a sub-regional, regional and inter-regional level

- To access to national web information resources of other countries within the region through a regional portal enabling an integrated search process

- To participate in debates on strategic issues at a regional level through electronic fora of discussion

- To strengthen capacity building and achieve back stopping activities

- To share common ICT tools, to define common standards for information and communication management in order to share information at an international level

- Other objectives

<u>**Key end users**</u>
Please define your targeted groups:

- Scientific Community

- Education Sector

- Governmental bodies and policy makers

- Private sector

- NGOs

- Farmers Organisations

- Libraries and information Centres

- Other end users

<u>**Contents of information and information services of the CAC-RAIS**</u>

- Information on stakeholders active in ARD Sector : Research Institutions, Extension services, Farmers Organisations, NGOs, etc

- Information on ongoing activities in ARD at the national level: Research projects, development programmes, etc.

- Electronic directories on national experts

- Depository of e-documents in ARD

- Question and Answer Service

- Electronic fora of discussion

- A multilingual platform (Russian, English, National) strengthening the sharing of information at a regional and global level

- Access to international information resources in ARD at an international level

- Other Contents

**Action Plan**

- To define a strategy document for the CAC-RAIS taking into account the main outcomes of this Workshop, similar with the other strategy document of APARIS and AARINENA-RAIS, with the support of the GFAR Secretariat and the strong commitment of the Participants of the Workshop and their organisations;

- To define a follow up and monitoring mechanism through an "ad hoc" Committee, and if agreed, to define this committee;

- To define the fund raising mechanisms, with the support of the GFAR Secretariat and other facilitating agencies such as FAO;

- To contribute, through concrete proposal related to the CAC-RAIS, to the Inter-regional Workshop of the GLOBAL.RAIS Programme of GFAR;

# FARA-RAIS Workshop

## 27-28 April 2004

### Accra, Ghana

The Forum for Agricultural Research in Africa (FARA) is an apex body for Africa's agricultural research for development (AR4D). It supports 3 sub-regional organizations (SROs), ASARECA, CORAF and SADC/FANR. FARA is a knowledge hub for stakeholders, actors and clients of AR4D organizations and Institutions. It is also the catalyst and voice for Africa's AR4D providing an umbrella organization and forming a coalition of stakeholders in agricultural research n Africa.

FARA's vision is to support Africa attain a 6 % annual growth rate in agriculture by 2020. By then, the region should:

- Have dynamic agricultural markets among nations and between sub-regions

- Be a net exporter of agricultural products

- Have food available and affordable with equitable distribution of wealth

- Be a strategic player in agricultural science and technology development

- Have a culture of sustainable use of natural resources.

Among FARA's primary activities are:

- An advocacy role of agricultural research

- Promotion of functional partnerships and strategic alliances for AR4D

- Accelerating sharing and exchange of knowledge.

The Global Forum for Agricultural Research (GFAR) is an apex body for global AR4D. GFAR is a global knowledge hub and the catalyst for global AR4D. It forms a coalition of stakeholders in global agricultural research.

FARA, to contribute to GFAR's GLOBal ALliance of the Regional Agricultural Information Systems (GLOBAL.RAIS) project, has initiated a regional consultation with close collaboration of sub-regional organizations for ARD and representatives of National Agricultural Research Systems (NARS). The aim of this consultation is to achieve a regional agenda in ICM for AR4D. For this initiative, it aims to collectively identify strengths and weaknesses of National Agricultural Information Systems (NAIS) and Sub-Regional (SR.RAIS) and Regional Agricultural Information Systems (RAIS) as also critical gaps and approaches to fill them to improve ICM and bring more effective ICT use in AR4D, especially for sharing and dissemination of agricultural information and knowledge in SSA. The activities in this consultation include:

- A review of existing facilities and studies conducted in the region on ICT use, ICM and KM

- Initiate assessment studies on ICT and KM to complement existing literature, with special reference to SSA AR4D, on ICT use, ICM and KM

- Organize a consultation workshop inviting ICT and KM providers in the region to formulate, review and endorse a strategy for FARA's information and knowledge management for AR4D.

- Prepare a regional strategy document that would include resource mobilization plans to support the strategy implementation

FARA, in collaboration with GFAR, organized an Expert Consultation Workshop *"Towards a Regional Agricultural Information System (RAIS) in the FARA Region"* on 27-28th April at Accra, Ghana. This document is the proceedings of the Workshop.

## 1    Agenda of the Workshop

The overall aim of the workshop was to develop a regional strategy for ICT/ICM in AR4D, leading to the establishment of a RAIS for sub-Saharan Africa (FARA-RAIS). The specific objectives of the Workshop were to:

- Identify the gaps of ICT and KM in Africa
- Define the strengths and weaknesses of the national and sub-regional agricultural information systems in Africa,
- Envision the information system requirements for the establishment of the RAIS
- Build the capacity/resources following the assessment of technology gaps
- Consolidate information and knowledge providers in Africa to facilitate its use to African agriculture actors or FARA constituents
- Facilitate the exchange of information and knowledge sharing at an inter-regional level, between all the Regional Fora and FARA's Sub-regional Fora.

The agenda of the Workshop included the following main sessions:

- Opening Session
- Learning from experiences of other regional fora
- Taking advantage of International Initiatives
- SROs ICT Strategies and expectations related to FARA-RAIS
- Towards a FARA-RAIS Strategy

## 2    Opening Session

In the opening Session, Dr. Monty Jones, FARA Executive Secretary briefed FARA vision and mission. He outlined its progress since its transition from SPAAR. The FARA Secretariat, based at Accra, Ghana is now fully functional. Dr. Jones briefed the participants of the Workshop on the importance of ICT use, ICM and KM in AR4D in Africa. For FARA, this area formed an important pillar for its primary activities. FARA believes that AR4D in Africa could only advance if its major players have access to new technologies and information. He wished that the consultation and the deliberations of this Workshop would help fruit FARA's role in AR4D in Africa.

In his opening remarks, Dr. Jean-Francois Giovannetti, Special Advisor, GFAR, briefed on GFAR. He stated that it is a multi-stakeholder initiative for agricultural research for sustainable development which involves the NARS and their regional fora. He described the latest activities of GFAR, which included a retreat in which all Regional Fora Executives Secretaries participated in finalizing the new GFAR 2004-2006 Business plan which includes the following four main clusters of activities:

- To facilitate the launching of innovative research partnerships through a multi-stakeholder platform
- To develop Inter-regional collaboration
- To accord highest priority for implementing "Advocacy, Liaison and Public Awareness" activities
- To strengthen the exchange of information, experience and knowledge amongst all GFAR stakeholders

Dr. Giovannetti indicated donor interest and commitment to GFAR's activities including the DURAS project. He described the GLOBAL.RAIS initiative and its progress including the Workshops held by APAARI. AARINENA, CACAARI and EARD and the plan to hold a Workshop for FORAGRO at San Jose, Costa Rica in May, 2004 and an Inter-regional consultation in June, 2004 at Rome, Italy. He reminded the participants that rapid globalization brings to all both opportunities and threats.

Agriculture is becoming more knowledge based and technology driven. There is an urgent need for development strategies for agricultural and rural development to be more centered on information sharing and knowledge management. He thanked FARA, Dr. Monty Jones and FARA staff to accommodate this expert consultation in its activities.

**3      Learning from experiences of other regional fora**

In this session, APAARI and EARD presented their experience and learning in the development of their regional information systems. The AARINENA presentation was made on 27th April 2004. Dr. Monty Jones chaired this session. The session was interspersed with interludes of comments, questions and suggestions after each presentation.

3.1   <u>AARINENA</u>

Dr. Ahmed Rafea, Secretary, Steering Committee of AARINENA-RAIS made the presentation on AARINENA-RAIS. The main lessons learnt by AARINENA were:

- A steering committee with clear terms of reference is essential for development of RAIS

- The RAIS has to be developed in modules and phases

- Initial focus on developing information systems on:

    a) Institutional Information

    b) Projects Information

    c) Experts information

    d) Project Outputs information

- A "Gateway" function is central to the RAIS activities

- Collaboration for information sharing and exchange among NARS Institutions needs to be through small sets of collaborative projects

- To accommodate diverse national information the RAIS information system architecture needs standards. One way to harmonize distributed databases is to use "wrappers"

3.2   <u>APAARI</u>

Dr. Sahdev Singh, Assistant Executive Secretary made the presentation on the Asia Pacific Agricultural Research Information System (APARIS). The main lessons learnt by APAARI were:

- Information needs of RAIS clients have to be regularly assessed as the RAIS develops

- Frequent Expert consultations enable evolution and fine tuning of the RAIS

- Steering Committee and National Information Nodal Points of RAIS need clear terms of references

- Status reports of ICT use and ICM in member NARS presented at expert consultations provide basis for further development of RAIS

- Value addition to information vital for sustainability of RAIS

- Commitment from NARS members and involvement of NINPs are major challenges to the further development of RAIS

- Advocacy role in ICT investments and capacity development in ICT use and ICM are also main expectations from the Regional Organization

- Adequate funding and personnel are essential for a vibrant, sustainable RAIS

3.3    EARD-Infosys+

Dr. Marc Bernard, Project Manager, Centre for Documentation and Information on Agriculture of Germany, (ZADI) made the presentation on EARD-Infosys+. The main lessons learnt by EARD-Infosys+ were:

- EARD-Infosys+ is evolving from being an information system for policy instruments to focus on collaboration for tools and services for agricultural research and development in Europe

- EARD-Infosys+ should be a demand driven information system with a portfolio of common ICT and ICM tools and information services

- The RAIS needs adequate funding and personnel to be operationally viable. EARD has several staff including 2 fulltime professional programmers and 2 Senior Managers.

- Standards essential for information sharing and exchange and needs to be included in RAIS strategy

- EARD-Infosys+ now provides several services and tools including a database that links people, projects, organizations, news, events, ALERT, collaborative editing of data and information, Node XML, Group organizer, E-journals and Web mail. These are open source based and can be shared with other RAIS and NAIS.

3.4    Summary

The overall learning that emerges from the experience of the Regional Organizations in developing their RAIS are:

- The need for a Steering Committee with clear TOR that leads to development of RAIS

- The need to have national information nodal points (NINPs) who are representative of NARS and have clear terms of reference. In case of FARA.RAIS, which constitutes of 3 SROs, the SR.RAIS may have NINPs with only a representative presence of NINPs in the FARA.RAIS committees.

- The need to have adequate funding and personnel for the RAIS

- RAIS strategies and implementation needs regular evaluation and monitoring in its formative phase

- Standards for information exchange and sharing have to be embedded into the RAIS information strategy

- Value addition to information, an advocacy role and support for capacity development in NARS are keys to a viable RAIS

## 4    Taking advantage of International Initiatives

Dr. Marc Bernard chaired this session. This session was also interspersed with interludes of comments and questions after each presentation. The following International organizations presented their agriculture related information initiatives in this session:

- Global Forum for Agricultural Research (GFAR)

- Food and Agricultural Organization of the United Nation (FAO)

    a)  World Agricultural Information Center (WAICENT)

    b)  Research, Training and Extension Division (SDR)

- The Essential Electronic Agricultural Library (TEEAL)

- The Commonwealth Abstracting Bureau International (CABi)

- Ministry of External Affairs, France, Scientific and Technical Information System (MAE SIST)
- Consultative Group on International Agricultural Research (CGIAR)

## 4.1    Global Forum for Agricultural Research

Ms. Fulvia Bonaiuti made the GFAR presentation on its Global.RAIS Project. The GLOBAL.RAIS is a European Union supported project. It envisages promoting linkages between regional organizations by linking their RAIS and by sharing and exchange of information. The GLOBAL.RAIS project has already organized 3 Regional Workshops for AARINENA, APAARI and CACAARI regional organizations. The FAR.RAIS Workshop was the fourth in the series. A workshop for FORAGRO and an Inter-Regional Workshop are planned to be held in May and June, 2004. The Regional Workshops enable a diagnostic of the various NAIS, regional strategy formation including plan of work and budget as also formation and/or review of steering and other committees for the development of RAIS. The EGFAR web ring of RAIS was also described in the presentation.

## 4.2    Food and Agricultural Organization

There were two presentation made by representatives of FAO.

The first presentation was on FAO's approach to scientific and technical information in agriculture and was made by Dr. Justin Chisenga from the FAO Regional Office for Africa. In this presentation, the potential synergies through action with FARA, especially in information systems, information sharing and dissemination, capacity development and building networks were described. Several programmes and projects in scientific and technical information sharing such as AGRIS, WebAGRIS, AGORA, in capacity development such as iMARK and regional and international partnerships were described.

The second presentation was on Information Systems for Research and Development and was made by Dr. Mauricio Rosales of Research, Training and Extension Division of FAO, Rome. Dr. Rosales described the Virtual Research and Development Center and Thematic Networking with experience from Leading Livestock Development towards Responsible use of Natural Resources (LEAD) initiative. The information services of LEAD were also described.

## 4.3    The Essential Electronic Agricultural Library

TEEAL is an initiative by Cornell University and Rockefeller Foundation. TEEAL provides access to more than 140 journals on CD-ROMs to Institutions in low income countries. The presentation was made by Dr. Gracian Chimwaza, Project Coordinator for Africa, TEEAL. It included how TEEAL links with similar initiatives in the region and results from a survey made by TEEAL in Tanzania.

## 4.4    Commonwealth Abstracting Bureau International (CABi)

The CABi presentation was made by Dr. Roger Day, Knowledge and Information Systems Coordinator, CABi, Africa Regional Center. Dr. Day described the six strategic themes and outputs by CABi. He also put CABi's activities in the AKIS framework and described linkages with AGORA and TEEAL.

## 4.5    Ministry of External Affairs, France, Scientific and Technical Information System

Scientific and Technical Information System (SIST) is a project being implemented in 12 countries, mostly Francophone North and West Africa and Madagascar though it includes Anglophone countries such as Ghana and Nigeria. It is funded by the Ministry of External Affairs, France. SIST aims to make scientific and technical information from Africa more easily accessible. The SIST presentation was made by Mr. Augustin Gaschignard, SIST Project Manager.

4.6    Consultative Group on International Agricultural Research

The CGIAR ICT-KM Initiative was presented by Dr. Ajit Maru on behalf of Ms. Enrica Porcari, Chief Information Officer of the CGIAR. The presentation described how the CGIAR is revitalizing itself through support from ICT and KM. This initiative is to bring profound changes in the CGIAR and emphasis is on system wide initiatives which are program based actions. The external drivers for this initiative are the rapid advances and reduction in cost of ICT, the increased reliance on multi-disciplinary team work and donor expectations, especially towards information based science. CGIAR expects to be an organization without boundaries in the next five years.

4.7    Summary

There are several initiatives to enable access to scientific and technical information in agriculture in SSA. However, discussions that followed each presentation indicated that connectivity, its availability, cost and quality were major constraints to the effectiveness of these projects that used digital and or Internet based ICTs for access to the information. There are alarming indicators such as the decline in all aspects of AGRIS, a major scientific and technical information service of the FAO. The need to provide digital and Internet based platforms for SSA researchers to publish was also discussed. FARA could play a significant role in advocacy, ushering collaboration and providing an information platform for one or more electronic journals for Africa.

The CGIAR KM-ICT Initiative, by its focus to leverage recent advances and cost reductions in ICT to transform its organization, is an approach that can be emulated by the NARS through its NAIS and advocated by the Sub-Regional and Regional Organizations towards NARS transformation.

The International initiatives presented in this session were largely biased towards scientific and technical information that supports agricultural research. There was an unresolved debate after the presentations whether the conceptual framework for RAIS should focus on supporting agricultural research or agricultural development, which includes research.

**5      Sub-regional Organizations ICT Strategies and expectations related to FARA-RAIS**

This session, chaired by Dr. Monty Jones, considered the Sub-regional Organizations and their expectations related to FARA-RAIS. Presentations made in this session included those made by:

- ASARECA
- CORAF/WECARD
- SADC/FANR
- FARA Study on ICT use and ICM Agricultural Research and Development in SSA

5.1    ASARECA

Mrs. Dorothy Mukhebi, Coordinator, Regional Agricultural Information Network (RAIN), described activities of RAIN. ASARECA has several regional agricultural networks around agricultural commodities and themes. RAIN is cross-cutting in these networks. ASARECA has consolidated its conceptual framework. RAIN activities grow out of a belief that high quality agricultural information is a pre-requisite for economic growth in the ASARECA region. Mrs. Mukhebi also described in detail the development and contents of RAIN Medium Term Plan 2004-2008 including priority setting of various activities.

5.2    CORAF

Dr. Dady Demby, Information and Communications Manager of CORAF made the presentation on CORAF ICT strategy. The main objectives of the strategy were to promote, facilitate and strengthen agricultural information sharing and exchange in the West and Central Africa (CORAF) region.

Various means are employed to achieve these objectives. The main expectations from FARA were for facilitating fund raising., advice on technical aspects, facilitate collaboration and information sharing among the SROs and facilitate partnerships between SROs and International organizations.

## 5.3 SADC

The SADC presentation was made by Dr. Keoagile Molapong, Senior Agricultural Research Expert, SADC/Directorate for Food, Agriculture and Natural Resources (FANR). Dr. Molapong stated that there were weak or no agricultural information policies in the NARS of the SADC region. There were several constraints to the use of ICT in agricultural research and development. SADC has been trying to establish a network of agricultural information specialists, coordinate the network, reinforce National capacities and enhance conduits to sharing of agricultural information. The wider objectives of SADC RAIS were to increase and sustain agricultural productivity through a better informed farmer. The specific objective was to serve as a conduit for sharing, dissemination and effective use of agricultural information. SADC was attempting to establish an "interactive" information system. This included websites and gateways to link researchers to information sources. Establishing a database of scientists and experts was in priority among its activities.

## 5.4 FARA Study on ICT use and ICM Agricultural Research and Development in SSA

This study was presented by Dr. Ajit Maru, Consultant, FARA. Dr. Maru initiated his presentation by presenting the issues around a conceptual framework for NAIS and RAIS. He then described the various information services a NAIS or a RAIS could provide and then enumerated the status and made suggestions how each service can be strengthened at the NAIS and RAIS levels. He also suggested issues that the Working Groups could deliberate in group sessions of the Workshop.

## 5.5 Summary

The SROs have recently or are undergoing strategy development for ICT use and ICM for their respective sub-regions. The policy frameworks that should guide ICT use in agriculture at the national and regional level are weak or non-existent. They impact strategy development at the NAIS and RAIS levels. Similarly, conceptual frameworks for NAIS and RAIS have not significantly evolved and they act as a constraint towards developing strategies and implementation plans. The agricultural information services *per se* are weak and ICT enabled services are even weaker because there is very little digital content that can be shared through electronic platforms. The ICT infrastructure, including hardware and software, in NARS and NAIS is inadequate or non-existent. Connectivity is poor and, where it exists, its' quality is also poor in bandwidth, persistency and reliability. The cost of connectivity is exorbitant and almost unaffordable even by larger organizations. Skill levels for various functions are inadequate and need to be developed urgently.

During discussions that followed the presentation, the presenters unanimously drew upon their experiences in stating the delay in finalizing and funding their project by donors and International development agencies which affect all their activities.

The main expectations from FARA are to:

- Facilitate fund raising
- Advise on technical aspects of ICT use and ICM in NAIS and RAIS
- Facilitate collaboration and information sharing among the SROs
- Facilitate partnerships among and between SROs and International organizations

## 6    Towards a FARA.RAIS Strategy

Taking a bottom-up approach, from NAIS and S-RAIS to FARA.RAIS, in devising a FARA.RAIS strategy, the participants at the workshop were divided into three working groups. Each group was chaired by the coordinator of the SRO.RAISs (ASARECA, CORAF, SADC) and facilitated by a

representative from other regional RAIS (AARINENA, APARIS and EARD/Infosys+). The groups also appointed a rapporteur each.

The groups were given sets of questions/guiding points around 3 topics. The first topic was towards a common definition of issues related to the sub-regional organizations RAIS. The second topic was on how FARA.RAIS can add value to the SRO.RAISs and the NAIS. This would help guide defining the overall goal and objectives of FARA-RAIS which, in turn, would contribute towards developing a strategy and action plan for the FARA.RAIS. The third set of points related to enabling the groups to suggest, through a participatory process and consensus, a feasible and pragmatic strategy and action plan for (further) development of the FARA.RAIS. The set of questions/ guiding points and responses around the 3 topics for each group were as follows:

1. A common definition of issues related to the SROs

   a) Who are the end users of your S-RAIS?

   b) What are the gaps and weaknesses of your present S-RAIS?

   c) What new contents and services would you like the S-RAIS to offer to end-users?

   d) What is the relation between your S-RAIS and the National Agricultural Information Systems (NAIS) and what is the articulation between the NAIS and S-RAIS?

   e) What are the development priorities for your S-RAIS?

2. Defining the goal and objectives of FARA.RAIS

   a) Conceptual framework for ICM/ICT in AR4D at the regional level

   b) Specific contents of information and related databases (please specify)

   c) Cross breeding / economies of scale leading to the definition of an agenda for regional collaboration

   d) Fund raising at a regional level

   e) Sensitization of senior officers and policy makers to ICM/ICT issues

   f) Establishment of distance learning centers for agriculture

   g) Others

3. Developing a Strategy and Action Plan for FARA.RAIS

   a) Is there a need for a short term and long term plan for the RAIS? If Yes:

      i. What are the steps to be undertaken in the short term in order to take advantage of the existing initiatives (GFAR, SIST, DURAS etc.) and what is the place for FARA.RAIS in them?

      ii. What are the steps to be undertaken in the long term to make FARA.RAIS sustainable?

   b) What could be the FARA.RAIS contribution to the development of GLOBAL.RAIS phase two, both in conceptual and technical terms?

c) Is there a need for a monitoring and follow-up mechanism? If Yes:

    i. Do you think a Task Force or a Steering Committee of the FARA-RAIS would be appropriate?

    ii. Please draft the Terms of Reference, as well as a proposed composition, for the RAIS Task Force or Steering Committee

    iii. Are there any other options for monitoring and follow-up?

## 6.1 A common definition of issues related to the SROs

### 6.1.1 End users of the S-RAIS

1. Policy Makers for ARD
2. Senior Managers of ARD Institutions
3. Agricultural Scientists, Researchers and Teachers
4. National and International Donors and Development Agencies
5. Non-Government, Farmer and Community Based Organizations engaged in agricultural and rural development
6. Agricultural Market Intermediaries and Input Suppliers
7. Private Sector involved in agriculture
8. Mass Media Information Platforms such as Newspapers, Radio and Television Stations
9. Consumer Organizations

### 6.1.2 Gaps and Weaknesses of S-RAIS

1. Institutional and Organizational Weaknesses

    a) Lack of a conceptual framework for agricultural information systems at various levels to guide NAIS, S-RAIS and RAIS development

    b) The NARS Organizations and Institutions are weak in ICT governance, information use and information and communications management

    c) Poor or non existent funding for ICT and ICM at NARS and SRO level

    d) The linkages across Institutions at NARS and sub-regional level are weak

    e) SROs have little influence over National/NARS agricultural information policies

    f) SRO vision, policies and missions not in consonance with SRO information networks/S-RAIS operation and function

    g) The national focal points are not active

    h) Lack of public awareness of agricultural information services and systems

2. Infrastructural Weaknesses

    a) ICT Infrastructure inadequate

    b) Poor networking such as Local Area Networks, Intranets and Internet based wide area networks within NARS

    c) Poor capacities in skills for information use and information and communications management at various levels

    d) Poor Internet connectivity in ARD Institutions

3. Information Process Weaknesses

   a) Information systems have bias towards those who have access to ICTs

   b) Lack of set priorities for information services

   c) Lack of information collection mechanisms at various levels and for different information services

   d) Inadequate useful and relevant content including databases

   e) Very few NARS have websites

   f) Existing NARS websites have little content

   g) Over emphasis on scientific and technical information services

   h) Asymmetry of information between farmers and other information user groups and ARD Institutions

4. Leadership Weaknesses

   a) Senior policy makers and managers not sensitized to the various dimensions of ICT enabled information systems such as ICT governance and ICM as related to Institutions, their structures, content management and integration of information processes in achieving overall organization goals

   b) Lack of Champions for ICT use and ICM at NARS and SRO level

### 6.1.3 New Content and Services for end users

1. Policy Briefs and guidelines

2. ARD Indicators and Statistics

3. Access to grey literature

4. International and National rules, regulations, standards such as on Biosafety, Specific Pathogen Free, Intellectual Property Rights, Food Labeling, Data and Information sharing and exchange etc.

5. Research programmes, projects and project outputs including information on potential collaborations, funding opportunities and events

6. Technical and Research Facilities

7. Training capacities and activities

8. Directory Services including yellow pages

9. Hosting of E-Discussion Lists and Communities of Practices

10. Common Databases such as for GIS

11. Early Warning Systems and Alerting Information Services at Sub-regional and regional levels

12. Market Information

13. Metrological information

14. Information platforms for NARS organizations

### 6.1.4 Relation between S-RAIS and NAIS

Present:

- S-RAIS Steering Committees reporting to SRO which have NARS representation

- Links to and hosting of NAIS websites

- Network of ICT and ICM experts – email and phone based

- E-Mail accounts for ARD professionals

Expected:

- SRO information policies, strategies, assessment frameworks, monitoring and evaluation mechanisms

- S-RAIS Steering Committees and Task Forces

- Formalized Terms of Reference for SRO.RAIS coordinators and National Information Nodal Points

- Harmonization of information systems and services and their governance between NARS and SROs through appropriate Institutions, structures and information generation and management process

- SRO focus on supporting enabling, enhancing and enlarging individual NAIS

- Common sub-regional and NARS level funding mechanisms for ICT and ICM governance

- Collaboration among, Integration of and Common Information Systems and Services

- S-RAIS provide gateway and links to information platforms within S-RAIS and regional and global sources of information

- Facilitation of information related institutions, associations, consortia among ARD organizations

### 6.1.5   *Development Priorities of S-RAIS*

- Formation/Renewal of Steering Committees and Task Forces for S-RAIS strategies and implementation of action plans

- Formalization of Focal Point Networks with regular country status reports

- Negotiation at various levels for policies and standards for information sharing and exchange

- Capacity development including infrastructure and skills at RAIS and participating NARS level

- Lobbying and advocacy for ICT infrastructure, governance and ICM

- Ensuring sustainability of S-RAIS

- Establishing information management, including collection, mechanisms at NAIS level

- Sensitization and awareness building of stakeholders

### 6.2   Defining the goal and objectives of FARA

### 6.2.1  *Conceptual framework for ICM/ICT in AR4D at the regional level*

There were several issues raised around the conceptual framework for NAIS and RAIS. These included:

- Whether the RAIS should be to support agricultural research or development, which includes research?

- What should be the formal linkage between sub-regional information systems and the regional information system?

- How does FARA define the intermediary and/or ultimate users of Regional Agricultural Information Systems?

- What Information Services do RAIS provide to its users?

- Is the relation and its' articulation between NAIS, S-RAIS and RAIS hierarchic or with equity for each member as in a network?

- What is the relationship between commodity, thematic and disciplinary networks at the SRO and RO region and the S-RAIS and RAIS?

The house remained divided on whether the RAIS should be to support agricultural research or development. Dr. Marc Bernard of EARD/Infosys+ was of the opinion that a wider scope of a RAIS would weaken its operations in view of the constraints ICT use and ICM faces in the region. Others in the house felt that the ultimate goal of FARA is rapid and sustainable development and FARA could not ignore the information needs for development. Dr. Mukhebi drew attention to how formal linkages would be needed between sub-regional and regional information systems especially at the operational level such as in Terms of Reference, allocation of funds and personnel, reporting relationships, accountability etc. The main end-users for FARA.RAIS included ARD policy makers, senior ARD managers, Researchers, Scientists and Teachers, National and International Donors and Development Agencies, Some categories of Non-Government Organizations, Farmer Organizations and Community Based Organizations. The information services the RAIS should provide to its users would need a "Needs Assessment" but were identified in general as information related to ARD Institutions, expertise, programs and projects, research outputs, technologies and innovations as also the services listed in Section 6.1.3. There was consensus in the house that the relationship between NAIS, S-RAIS and RAIS was based on equity among them, though each had different goals, objectives and focused, with different emphasis, on the various information services they provided. The concept was that the relationship between NAIS, S-RAIS and RAIS was as in a Network. The issues in defining the relationship between existing networks and S-RAIS/RAIS are vexing. The general opinion expressed in the working groups was that the S-RAIS and RAIS enable the networks in their information sharing and exchange by providing an "information" organization with ICT governance and ICM for their content and information platforms and enlarge, enhance and enable the networks' users/clients.

The participants indicated that the conceptual framework issue should be examined by the FARA.RAIS Steering Committee/Task Force.

### 6.2.2 Specific contents of information and related databases (please specify)

The participants indicated the Steering Committee/Task Force should examine this issue carefully in view of the several suggestions that have been made by them.

### 6.2.3 Cross breeding / economies of scale leading to the definition of an agenda for regional collaboration

There was consensus that a FARA.RAIS would enable the region to have a strong voice in several issues including advocacy, funding, negotiations such as for standards, rules and regulations, providing guidelines, sensitization of policy makers and senior managers and enabling NAIS and S-RAIS through capacity development in ICT use and ICM based on region, language, themes and specific needs.

### 6.2.4 Fund raising at a regional level

As indicated above and experience of the three SROs with a major donor indicated, FARA would have a key role in fund raising at a regional level for this area of its activities.

### 6.2.5 Sensitization of senior officers and policy makers to ICM/ICT issues

Participants indicated that sensitization and awareness building for information and knowledge management issues related, ICT and ICM policies and strategies etc not only among senior officers but for general public in the region was an important role for FARA.

*6.2.6 Establishment of distance learning centers for agriculture*

This was a key weakness for the region since the use of ICT enabled new approaches to learning and skills development in agriculture, research and development. FARA has to play a key role in advocacy, funding, policy and strategy development and offering FARA.RAIS platform for certain categories of ODL in ARD.

6.3     Developing a Strategy an Action Plan

*6.3.1 Short and Long Term Plan for FARA*

There was consensus that FARA.RAIS has a short and long term plan. A Task Force should look into the development of FARA.RAIS strategy and plan.

*6.3.2 Contribution to GLOBAL.RAIS Phase 2*

It was expected that FARA plays a key role in GLOBAL.RAIS Phase 2 as the SSA region lagged behind most among all other regions in exploiting the digital opportunities that are emerging with rapid advances in ICT.

*6.3.3 Follow up and Monitoring and Evaluation Mechanisms*

This would necessarily follow the development of FARA.RAIS strategy and action plan. The Steering Committee/Task Force would be expected to provide appropriate guidance to monitoring and evaluation mechanisms

*6.3.4 Others*

The participants felt that an in-depth study on the status of ICT, its use, governance and ICM in each NARS was urgently needed. This status should also be regularly updated. The Steering Committee/Task Force could lay the structure of this study and of the contents of the Status Report.

## 7     Recommendations of the Workshop

The final recommendations of the Workshop were as follows:

*Recognizing the:*

- Need to establish the FARA RAIS as a tool to implement FARA's 3rd function
- Operational role of SROs and their SRO-RAIS in FARA_RAIS (based on existing initiatives)
- Need for national information focal point within NARS
- Non hierarchical structure role (equal)
- Need to support and strengthen the SRO-RAIS
- Need for regular S-RAIS/RAIS meeting
- The role that FARA has to play in the GLOBAL.RAIS

*Acknowledging:*

- The Equal relevance of various RAIS
- Different levels of implementation of the ICT/M at the SRO level

*Endorsed that FARA has:*

- Coordination role at the regional level
- Advocacy to policy makers and other stakeholders 'ambassador role'
- Facilitating role in accessing donors

- Operational role in the establishment of the FARA-RAIS

*The Recommendations to FARA are to:*

- Develop the proceedings based on discussions during the workshop and disseminate it (at the earliest)

- Establish the taskforce (no later than June, 2004)

  a) consisting of SRO, FARA and NARS (on rotational basis) and observers from different organizations

  b) TOR (based on the recommendations of the working groups)

- Complete the regional study with special emphasis on the national and sub regional information resource initiative and plan of work

- Establish conceptual framework for FARA-RAIS including user-definition, content and functional requirements, responsibilities of NAIS, SRO-RAIS and FARA-RAIS (fitting RAIS to SRO and FARA mandate)

- Launch an expert consultation to establish the action plan based on conceptual framework

- Enable the taskforce (FARA, SROs) to follow the implementation of the action plan

- Participate in conceptualization of GLOBAL.RAIS phase 2