

Proceeding

AARINENA ICT General Assembly Meeting Amman-Jordan April 25-26, 2006

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Introduction

Information and Communication Technology (ICT) has become an essential component for development, not only of the agricultural sector, but also of industrial, environmental, and service sectors as well. It is a crucial element in establishing the sustainable development in any country.

Realizing the important role of ICT in creating a sustainable agricultural development, AARINENA worked intensively during the last decade or so and has committed to strengthen this sector and enhance its usage in the WANA region.

Addressing the development of the agricultural sector through the enhancement of information and communication technology was put as an urgent priority for AARINENA decision makers. Experiences of member countries in this field were highly acknowledged and identified for future use. The formation of the ICT Steering Committee, which proved to be fruitful, launching a set of databases, and addressing the training needs are good examples of the continuous efforts of AARINENA to improve the abilities and enhance the capabilities of its member countries to achieve sustainable agricultural development. There is no doubt that information system development requires intensive and integrated efforts by all countries to achieve the goals and objectives set by the steering committee. The fact that cannot be denied is that the development of the ICT sector must be backed-up and supported by political commitment of all members.

Background

During the AARINENA Executive Meeting in 19-20 December 2001 in Tehran, Iran, according to the proposal of Iranian Agricultural Research and Education Organization, the RAIS Secretariat has been hosted by Iran. This secretariat which takes place in the first floor of the AREO building, in the **Agricultural Scientific Information & Documentation Center (ASIDC)** tries to collect information through National Information Nodal Points (NINPs) from sub-regional countries. All the activities related to the AARINENA web site (<http://www.aarinena.org>), manage and develop by this secretariat

At the beginning of 2003, an AARINENA-ICT expert consultation meeting was sponsored and managed by GFAR, AARINENA, ARC, and FAO/RNE in Cairo, Egypt, to strengthen RAIS in the WANA region and to discuss collaborative programs between member countries. Among the important issues that emerged from the meeting was the formation of AARINENA-ICT Steering Committee. The committee has held two meetings, so far, during which the weaknesses and strengths of the current regional situation were identified. The vital role of RAIS that can be played in the WANA region was emphasized and acknowledged. The status of human resources in member countries was highlighted.

As a result of these meetings, it was agreed to strengthen the NAIS in all countries of the region, boost communication between member countries on different ICT activities and initiatives, standardize the tools used for developing the system, and enhancing training activities between member countries.

Development of remote sensing, GIS, expert systems, VERCON, and ARC integrated information system, as well as creation of websites and databases are just a few of the many systems that were developed to benefit the agricultural sector.

The long and rich experiences of the international organizations such as GFAR, FAO, and the AOAD were acknowledged. They presented a wide spectrum of available activities that can be disseminated and circulated between the WANA countries. AGRIS, VERCON, electronic publication, modernized websites and databases, as well as management and monitoring of generated information were

offered as future collaborative projects. Information exchange between member countries has served as a catalyst for improving the ICT sector.

Goals and Objectives

The purpose of conducting the third ICT Steering Committee meeting (ICTSC) was two-fold. Among the important goals of the meeting was to review the achievements of the ICTSC during the last three years and to introduce participants to the latest developments of the ICT in the WANA region.

The need to define an action plan and set an agenda for inter-regional activities for the newly elected steering committee was seen as a crucial tool to assist member countries in defining their priorities, based on their actual needs. The election of a new steering committee and a chairman for the next three years was also among the important activities of the meeting.

Enabling Environment

Due to the dramatic changes taking place in global markets, agriculture has relied more on technology and has become more market-oriented. Developing countries have realized that they need relevant, up-to-date, and timely information to compete at the global level to sustain their production and to improve their livelihood.

Recognizing these facts, AARINENA has put more emphasis and has intensified efforts for improving the ICT at national, regional, and global levels, developing ICM, enhancing information exchange through better governance structures, and improving integration efforts. They were seen as a core for any future development of the agricultural sector in general and the ICT in particular.

The need for the enhancement of the ICT sector in the WANA region has become a priority of all countries. It was driven by the recognition that an urgent need to modernize the sector has become imminent. All WANA countries have realized that the achievement of the above-mentioned goals and objectives have to be based more on restructuring of policies, rules, and regulations. Many countries have taken the initiatives to establish new systems and modify the existing ones, changing rules and regulations to create the environment needed for establishing a solid information system that can be used as a starting point for improving information exchange.

The fact that can not be denied is that, as a result of these efforts, well-designed websites were developed, databases were created, new laws were issued and adopted, and new information systems were established.

Sponsors

The meeting was sponsored by GFAR and organized by AARINENA.

Location and Duration

The meeting was held at AARINENA office hosted by ICARDA West Asia program in Amman, Jordan during April 25-26, 2006.

Agenda

The work plan, which was set for two days, was modified due to the absence of

few representatives from the UAE and Tunisia. (See Appendix 1). The first day was supposed to have presentations of the international organizations and a few country reports. Two presentations were shifted to the first day to allow more time for discussions, allocating longer hours for the preparation of the proposed plan for the next three years and for the election of a new steering committee and its chairman.

The first day included country reports about Iran, Oman, Kuwait, Jordan, Lebanon, and Sudan. The second day was divided into four parts; the first part included the presentations of Cyprus, Egypt, Yemen, and Morocco. The election of the new steering committee and its chairman lasted until the lunch break, while setting the new action plan and countries' priorities was done during the third part. The newly-elected committee held its first meeting during the last part.

Participants

An invitation to attend the ICT steering committee meeting was extended to all WANA members. Unfortunately, due to certain reasons, several members could not participate in the meeting. However, the representation of all regions was achieved through the attendance of at least one member of each region.

From the West Asian Sub- region, only Iran attended.

From the North African Sub-region, only Morocco attended.

From the Arabian Peninsula, Oman and Kuwait attended.

From the Nile valley and Red Sea, Egypt, Sudan, and Yemen attended.

From the Mashreq region, Cyprus, Lebanon, Jordan, Syria and Iraq attended.

Representatives of Tunisia, Libya, Palestine, Saudi Arabia, UAE, Pakistan, Turkey, Malta, and Afghanistan could not attend the meeting, while the Syrian representative attended the second day only. (See List of participants, Appendix 2).

Briefing of the Final ICT/SC Report

In February 2003, an expert consultation meeting was held in Cairo/Egypt to strengthen RAIS in WANA countries. Among its recommendations was the creation of a committee that deal with the development of the ICT sector in WANA region. The meeting, which was sponsored by GFAR, and attended by international organizations (FAO, ICARDA, and AOAD), was chaired by Dr. Ahmad Rafea, Chairman of the elected Steering Committee.

Since then, the committee never spared an effort to achieve the goals and objectives stated in its TOR document, especially regarding the development of an effective ICT sector in agriculture.

. Terms of Reference of the committee was prepared by its chairman and was distributed to other members for comments. Later on, the executive committee has endorsed them. Among the main aspects of the new TOR is that the committee which included representatives of the five sub-regions (Mashreq, Maghreb, Arabian Peninsula, Nile Valley and the Red Sea, and West Asia) is composed of specialists from the information and communication field. According to the TOR, members will be elected from ICT representatives and will meet every three years to discuss the achievements made on the ground within the last three years, the latest developments of the ICT sector, and any other recommendations for improvements.

It was also agreed that the ICT/SC will have to develop a specific program for the next three years of its term, facilitate communication between member

countries, and ensure that they are timely delivered, as well as monitor and evaluate the execution of these programs. Reporting to AARINENA's executive committee as well as to the ICT General Assembly is also among the main duties of the new elected committee.

The report pointed out the main achievements of the committee. It was indicated that after several meetings, representatives were able to identify the main strengths and weaknesses of the current regional system. The Egyptian experiences as well as the tools developed by the international organizations were highly acknowledged. The efforts of some countries, and specifically Iran and Morocco were described as successful.

On the other hand, the weaknesses of the current system were also discussed. Probably, lack of qualified staff in most member countries was among the main weaknesses of the current system. No doubt that the language barrier and communication at the regional level were also among the weaknesses. It is worth noting that representatives of the region speak four different languages, where is no common language between them.

The report presented also some of the achievements at the regional level. It indicated that the site of AARINENA was modified, through AREO/ Iran. The Arabic version, which was supported by the Cairo Regional Office of the FAO was achieved.

It is important to note that among other achievements of the former ICT /SC was the preparation of two phase framework of collaborative program.

The first phase included four models to develop the Institution Information System, Expert Information System, Project Information System, Research Output Information System, and Electronic Forum for discussion, while the second phase was to develop a gateway function that has multi-host database search engine and Question-and-Answer service.

For the purpose of identifying the status of human resources, the committee implemented a study, in which it was found that most countries recognize the urgent need for technical training to build their institutions. Unfortunately, the lack of well qualified and trained technical staff was identified as the most serious obstacle of any future development. It was also found that many countries have no AGRIS services, have no human resource base to develop the NAIS, and not satisfied with what they have.

With regard to the physical status of the ICT sector, the study found that no serious problems were found with internet hardware connectivity, but problems exist with software and its development. Based on the study results, it was suggested that a project proposal be prepared to develop the WANA/RAIS. It is worth noting that the proposal was developed and approved later in Tehran, with commitments from GFAR to implement it through AARINENA.

During the three year serving time of the committee, certain problems were encountered. Funding the meetings as well as the implementation of the first phase was among the most serious problems facing achieving the goals and objectives. Identifying the focal countries representatives and absence of specific procedures for appointing new members in case of resignation were also among the problems encountered.

Needless to say, that regardless of the few problems encountered, there are many positive aspects during the last three years. No doubt that the infrastructure in most member countries has developed substantially. Therefore, building on the achievements on the ground is a must. It was realized that capacity building, which was among the serious problems, can be overcome with extra efforts.

Opening Session

The meeting started with a welcoming statement by Dr. Ibrahim Hamdan, the AARINENA Executive Secretary, in which he wished the participants fruitful discussions and hoped the deliberation of the meeting would benefit all AARINENA members. He also presented the importance of the agricultural sector as the dominant factor of economic development in WANA region and the role of information technology in enhancing the sector. The essential role of Information and Communication Management (ICM) as one of the main activities of AARINENA was emphasized and the active role of GFAR in establishing the Regional Agricultural Information System (RAIS) and the website was also acknowledged.

Dr. Hamdan hoped that participants of the meeting will reach a consensus on a number of issues regarding a strategy and an implementation plan for further development of the ICT of NARS within the WANA region. It was also hoped that the meeting would come-up with an action plan for the coming three years to strengthen AARINENA RAIS and to enable further integration of NAIS of member NARS at the regional level.

At the end of his statement, Dr. Hamdan thanked ICARDA for hosting the meeting, GFAR for their support, FAO and AOAD representatives for their continuous assistance, Dr. Ahmad Rafea for his valuable contribution during the past three years serving as chairman of the ICT Committee, in addition to all ICT country experts for preparing their country reports. Finally, he wished all guests a nice stay in Jordan

The important role of GFAR in terms of supporting AARINENA activities in general, and the ICT/RAIS in particular, were emphasized in Dr. Maru's statement, in which he stressed the importance of the ICT sector and the urgent need to develop it for the benefits of member countries. Improving dialogue between ICT/SC was pointed out as a major factor contributing to developing the sector. Exchange of information and experiences was also described as an essential component for ICT development at the national and regional levels.

Session 1:

International organizations' presentations

This session was chaired by Dr. Jamal Alrusheidat, and included three presentations of the international organizations attending the meeting.

Dr. Al Sadiq Osman, representative of the Arab Organization for Agricultural Development (AOAD), briefed the participants of the main activities conducted within the last two years. He stated that the organization's main activities were about electronic publishing, information systems, networking, and capacity building.

Management of electronic information and using web AGRIS were among the main workshops implemented by the organization. They were attended by

representatives from five Arab countries in addition to Iran. Dr. Al Sadiq mentioned that an agreement was signed with the FAO to implement a sub-regional training about digital libraries for management and dissemination of agricultural knowledge. The establishment of the "Electronic Agricultural Resource Network for Arab Countries" will be implemented this year, he added. It is worth noting that 45 participants from Arab countries had an active role in two activities about electronic publishing held last year.

The efforts of the AOAD were obvious in the field of networking. It was stated that the organization developed several networks about agricultural marketing, animal diseases, and non-governmental bodies working in environmental aspects.

The FAO was represented by Dr. Magdi Latif, the Regional Information Officer the Regional Office in Cairo, who outlined the FAO ICT/ICM activities and its support for the Near East region. He described its achievements at the regional level, indicating that the website, for example, included over half a million pages, 13,000 documents, 13,000 dynamic applications, 500 multimedia resources, and 100 databases. The number of visitors to the website exceeded 1.5 million.

The technical assistance and cooperation programs such as VERCON, and its expansion phase, as well as the sub-regional phase, were described. NARIMS, an information and communication system designed to enable scientists to carry out their research more effectively and efficiently, was also explained. The technical assistance provided to a number of Arab countries such as Libya, Jordan, and Morocco was mentioned.

The capacity building in support of AGRIS and building partnerships to build capacity at the national, regional, and international levels were described. Finally, Mr. Latif discussed the collaboration with national and regional institutions, UN agencies and other concerned partners involved in the development, analysis, and preparation of regional and sub-regional trends.

The GFAR activities in ICM for ARD were presented by Dr. Ajit Maru, who started the presentation with an overview of the changing environment at the global level. It was emphasized that intensive agriculture requires more knowledge and emergence of new stakeholders for the agricultural information system. The fact that cannot be denied is the increasing importance of information technology for improving the livelihood of stakeholders to achieve sustainable agriculture. With regards to the activities of GFAR, it was mentioned that the Global RAIS Initiative needs to build an agenda for ICM for ARD, included advocacy, capacity development, integration, and governance. A need to integrate the agricultural information system was seen in the restructuring of EGFAR, GFAR initiatives, communication strategy, and communication management.

In his final remarks, Dr. Maru indicated that the possible directions for ICM for ARD for the WANA region include four important phases. These are the infrastructure phase, the operationalizing of the information system phase, the coordination phase, and the effective use of information for agricultural development phase.

The achievements of the former ICT/SC were briefed by the former chairman of the ICT, Dr. Ahmad Rafea.

Session 2&3 :

Country Reports

Two sessions have been considered for country reports and was chaired and managed by Dr. Ahmad Rafea and included six presentations. Representatives of the national agricultural research institutions of Iran, Oman, Kuwait, Jordan, Lebanon, and Iraq presented their country reports. Sudan was included in this session due to the absence of the UAE representative and to add to the time allocated for the selection of a new chairman for the ICT. The third session which held in 26 April 2006 was chaired by Mrs. Taraneh Ebrahimi. Representatives of the national agricultural research institutions of Cyprus ,Egypt ,Sudan ,Yemen and Morocco presented their country reports.

The status of the ICT in each country, with the emphasis on the current resources available, was explained. Future perspectives and long-term objectives were mentioned and the obstacles facing the ICT sector were discussed. It is important to note that country reports were broad in terms of their content, management capabilities, and system development. It is also worth noting that each representative was given 15 minutes for presenting the report and another five minutes for discussion.

A brief review of each presentation is as follows:

Iran

The report was presented by Taraneh Ebrahimi, who gave a general introduction about Iran in terms of population, area, GDP, and the country's structure in terms of the number of villages, cities, and their population. The current status of telecommunications was also clarified. It was stated that the Ministry of PTT was renamed as the Ministry of ICT. In addition, two organizations and two councils were formed. It was mentioned that the number of fixed lines and the number of mobile subscribers between 1979 and 2005 almost tripled. Ms. Ebrahimi stated that the number of Internet users was around 7.5 million, was also doubled during the same period.

When it comes to the goals and objectives of the National Information and Communication Agenda, the report indicated that development of ICT in commerce, moving toward e-governments, application of ICT in schools and higher education institutes, as well as in social services are the most important goals of the Iran government. In agriculture, the main issues of the ICT were marketing and strengthening the virtual intranet of the ministry.

The Agricultural Research and Education Organization (AREO) is the largest institute in the country where 450 PhD holders, 1800 Master degree workers, and over 2,200 staff members work. AREO has its own LAN and hosts its website on its server. It uses the open source Web server software, with a broadband Internet connection at 512kb/sec. The institute has around 600 computers, half of which are connected to the Internet. The Agricultural Scientific Information and Documentation Center is the leader of ICT in AREO, which offers scientific services to agricultural institutes and other personnel. It hosts AGRIS and a computerized Library Information System.

The report was concluded with few remarks about the ICT, which was described as a fast growing sector, with huge investments by the public and private sectors, as well as a large number of educated personnel particularly working at the private sector. The ICT sector as indicated in the report is facing several challenges and problems. Probably, the low salaries of the ICT sector, the lack of well-developed systems and the proper awareness about it, as well as the absence of qualified personnel in the public sector are the most important of these challenges.

Oman

The report was presented by M. Dhuhli, who gave a summary about Oman in terms of the population, area, development of the agricultural system in the country, and the relations with regional and international agricultural centers.

With regards to the information system in agricultural research, the report indicated the availability of several information facilities. Among these are the computer labs which have 100 computers and laptops, the agricultural Research Library and Documentation Center, GIS, and AGRIS. The Sultan Qabus University (SQU) has also several information systems, such as the Agricultural Research Library and Documentation Center, Center for Information, and the Library.

It was emphasized that the National Strategy for Digital Oman and E-Government was created about four years ago, including several committees such as "The Information Technology National Committee (ITNC), The "Information Technology Executive Committee" (ITEC) and the "Information Technology Technical Secretariat "(ITTS).

The Oman Telecommunication Regulatory Authority, which was established four years ago, has several goals to achieve. Developing telecommunication infrastructure, promoting Internet usage, ensuring that consumers receive the best service, and attracting foreign investments are among the most important ones.

Mr. Dhuhli concluded his report with little statistical information, in which the number of Internet users, subscribers, and providers were listed. Around 45,000 Internet subscribers and 100,000 users are in Oman. Only one national Internet service provider is available in the Sultanate.

Kuwait

The Information and Communication Technology report was presented by Mohammed Al-Langawi, who described Kuwait and its ICT structure. It was mentioned that the country's population is around 2.4 million, living in slightly over 17,000 square km. There are two mobile companies serving well over 2.4 million users. The Ministry of Information and Communication is the only governing body of the sector. The huge demand for phone lines has resulted in the installation of around two million lines. Two million Internet users subscribe to three Internet companies existing in the country, in addition to Internet cafes and Internet parks. The country uses LAN, WAN, and VPN networks.

The report pointed out the main goals of the IT sector, the most important of which was the creation of a sound infrastructure. The purchase of hardware and software and the training required for them are also among the government's priorities. Other goals of the government include the development and modernize the system in a way to suit the new developments in this field. .

It is important to note that the Government of Kuwait is keen to develop the ICT in agriculture through better and stronger ties with other nations. Providing subsidies to farmers is also another critical issue that the government is implementing. There have been some statistical studies to determine the actual needs of farmers in both the soil and environmental aspects. The creation of PAAFR, where soil surveys have been done, is also an important factor to be considered by the government. It is important to note that the government of Kuwait has put in its plans for the development of GIS as well as the training of farmers.

Jordan

The report was presented by Dr. Jamal Alrusheidat, who stated that the ICT sector in Jordan is still in its infancy, but on the bright side, technology is everywhere; in public offices, in the private sector, in schools, educational institutes, and at homes. As stated in the report, the country has a strong Public/Private Partnership (PPP) and the path taken by the government emphasizes economic reforms, international competitiveness, wise foreign investments, and true PPP. The report described the ICT Forum as the beginning of the creation and development of the ICT sector. It was described as an annual, international platform to show the efforts and achievements of the ICT sector and highlighted investment opportunities.

The REACH initiative emphasizes the regulatory framework, enabling environment, capital and finance, advancement of the IT sector, as well as human resource development. The report listed the main strengths and weaknesses of the ICT sector. The leadership, PPP, human resources, legislative environment, foreign investment, and the infrastructure were the main strengths of the ICT.

With regards to the development of ICT in agriculture, it was indicated that the National Center for Agricultural Research and Technology Transfer (NCARTT) has developed its infrastructure to suit the new developments in the international arena. The creation of the website, databases, AGRIS Gene Bank, as well as being a member of AGLINET are some of the many examples of the important role of ICT in agriculture.

Lebanon

The report was presented by R. Kalaily, who indicated that Lebanese Agricultural Research Institute (LARI) is the main governmental research body in the country. It is an autonomous agency and consists of seven research centers distributed throughout the country. The center conducts agricultural research in soil, crop, livestock, water, environmental, irrigational, and food sciences in eight different stations, which are not connected yet to the main center due to the high connectivity costs.

It was indicated that LARI has its own database site which includes several things from annual reports and extension services to GIS and Document Management System (DMS). The latter is used for indexing documents which are created internally, as well as tracking transactions. The center has around 100 PCs. In each department at Tal Amara, one PC is connected to the Internet, but all the staff members have Internet access. The plan for station development consists of several stages. The first one, which was recently accomplished, has 1 Gbps ability to connect all departments.

The report indicated that 50% of the staff members were trained and that GIS and DMS are provided. About 40 different PCs, printers, digital cameras, and many other peripherals are available to the staff.

The future plan of LARI includes establishing a network infrastructure, purchasing more PCs, centralizing the available data, producing more GIS data, and taking advantage of the available Internet connection.

Iraq

The Iraqi presentation was very short; due to the fact that the war destroyed the available system. The report mentioned some future plans to restore and modify the available one by establishing a new modernized system that suits the future needs of the country and trains all staff members where needed.

The basic needs as indicated in an answer to one of the questions were the establishing the infrastructure, GIS, and training. The country is in need of all kinds of training due to the long years of sanction.

Sudan

The report was presented by Dr. Mamoun Bashir, who briefed the meeting with the latest developments in the ICT sector. A short introduction about the agricultural sector in Sudan and its governed policies and strategies was described. The ICT infrastructure and the services provided by NARS/NAIS, as well as the agricultural information networks and projects were mentioned.

It was indicated that the main information policies are those of legal, organizational, and institutional types. The main goal of the government is to create the needed environment to improve access to information to enhance economic growth and welfare. There are rules about the liberalization of information and the communication sector. E-commerce in trade, electronic trade, and banking services are also among the legislations taking place in the country.

With regards to capacity building, it was pointed out that the government has put more emphasis on developing human resource base through a national initiative to mobilize certain approaches regarding education, health, and government administration. The government is also considering formulating laws on cyber crime as well as laws concerning informatics, industry, and services.

The report indicated that initiation of the National Telecommunication Corporation (NTC) and the Telecommunication Act of 2001 and its by law of 2000 were the core of the creation of a modern information and communication system in the country. The National Agricultural Information Service (NAIS) in Sudan include several organizations. Among them are the international organization FAO and the AOAD, regional centers, university libraries, as well as government-affiliated bodies.

The ICT structure in Sudan consists of a wired-line telephone network which serves the country through 1.5 million installed lines, 900,000 subscribers, 238 switches, two international gateways, and 6,600 km of fiber routes. The mobile network in the country is developing very well according to the report. There are two available companies; the Sudanese Mobile Company and the Canar Telephone Company which have covered the country since 1997.

The report was concluded with future plans for the country. It was pointed out that Sudan is looking to improve the ICT sector through a progressive increase in electricity usage, radio and TV broadcasting, restructuring of the educational system, training programs, issuing new policies that give the ICT a higher priority, as well as establishing a new national information center. The economic policies were also taken into consideration. The government is looking forward to improving the economy through inflation reduction, providing more job opportunities, and oil development projects.

Cyprus

The report was summarized by George Adamides, who pointed out that for a small country like Cyprus, with a population of around one million, the national research system is under the authority of several organizations: the Planning Bureau, the Research Promotion Foundation, and four other governmental ministries. The Agricultural Research Institute (ARI) is the only institution in the country which handles agricultural research. The institute has an AGRIS section and a National CARIS Center which supplies the FAO with needed data.

With regards to the ICT sector in Cyprus, it was mentioned that the penetration rate constitutes a small portion of the population when compared with that of the EU. The percentage of Internet users, now at 32%, is swelling after the liberalization of the market in 2003.

In agriculture, around 18% of farmers have access to computers, while 15% have access to the Internet and around 81% have mobile phones. The Agricultural Development Plan of 2007-2013 is considering encouragement policies to increase the use of computers in farms. In connection with the development of the ICT sector, it is worth mentioning that Farm Accountability Data Network (FADN) required by the EU was prepared by the Statistics and Agricultural Economics Section. Other developments were achieved through the creation of the official website of the institute, the ARI web-mail, and the provision of LAN for the research staff.

Egypt

The report was briefed by Dr. Soliman Edrees, CLAES Director, who explained the ARC structure, listed the information systems policies and strategies in terms of the network infrastructure, as well as the available services and future plan. The ICT/ICM governance structure was also mentioned. The presenter pointed out that Agricultural Research Center (ARC) has 36 labs, institutes and research stations.

With regards to the information system policies, Egypt has developed expert systems for horticulture, field crops, and veterinary administrations. The government has also developed the National Agricultural Research Information System which provides agricultural research results, institutes, projects, personnel, and publications.

The report indicated that the Virtual Extension Research Communication Network (VERCON), which uses Farmer's Problem Model, Expert System Model, Agricultural News Model, as well as the Agricultural Extension Document Model, was created in Egypt to assist farmers in their farming practices. It is important to note that the Rural and Agricultural Development Communication Network (RADCON), an extension of the VERCON version, designed to introduce developments in areas such as gender, small projects, marketing, and the environment.

The achievements described in the report were many. Among the most important of these is the provision of Internet connectivity to 34 institutes and research labs. The other main achievement was the purchase of hardware for hosting the ARC web server. It is worth mentioning that the number of ARC users has increased to more than 300. Future plans are set to cover all researchers with the service and complete the remaining sites which are not yet connected to ARC, as well as propose technical specifications for its security.

Yemen

The ICT situation in Yemen was reported by Dr. Mohamed Sallam, who gave a detailed description of ICT in Yemen. The report stated that during the last few years, there were a number of new policies and strategies in the ICT sector. Probably, the 2001-2005 ICT strategic vision by MTIT (2000) and the General ICT Survey by NTC are the most important. There are some other policies and strategies that deal with restructuring agriculture in general and research and extension in particular.

The use of ICT in Yemen was described in figures. It was mentioned that telephones and faxes are used by around 42% of the population. In addition, postal services are used by 30%, while E-Mail is used by 10%. According to the report, about 48% of all the work done by computers was for secretary and office activities. Less than one-third of the population used computers for programming and database management, while only 10% used it for training purposes.

With regards to agriculture, the Agricultural Research and Extension Authority is the largest agency handling agricultural activities. It consists of more than 13 branches and centers all over the country. Four specialized research centers are in charge of plant and animal production, as well as one training center at the national level. The GIS and Remote Sensing Section, which was established about ten years ago, is equipped with hardware and software such as ArcInfo, ArcView and GIS, AIMS and ERDAS.

The AREA has its own website and its own LAN. It has over 100 computers, which almost are connected to the Internet. It is worth noting that most programs concerning financial issues, documentation, and research activities were developed locally.

No doubt that the ICT sector, as in all countries, is facing problems and challenges. The report indicated that the lack of proper strategies, policies, rules, and regulations are among the important obstacles, facing the sector. Data collection and analysis also faces some problems due to data inconsistency. Lack of awareness and skills in the ICT sector represent important constraints for its development. Finally, the report pointed out that weak investments in the public and private sectors, as well as corruption, have their negative effect on the development of the sector.

Morocco

The report was prepared and presented by Otman Sebbata, who represented the Maghreb sub-region. He briefed the meeting with the national policy and strategy of the ICT and its governance structure. The ICT infrastructure in Morocco and the information services provided by NARS/NAIS were discussed.

The report indicated that the development of the ICT sector was affected by certain problems related to the telecommunication infrastructure, Internet access,

legal aspects, and the educational system. Therefore, an ambitious project (E-Morocco 2010) was launched in 2004 to improve the ICT sector and to resolve the complications.

The main issues of the national strategy and policy aspects were content development to strengthening the ICT infrastructure in terms of the services provided. Training was studied and its profile was based on needs and priorities. The ICT industry was among the main goals of the new developed strategies, the purpose of which was the development of a national productive and competitive ICT industry. Another important aspect of the policy is the development of call centers in the country.

It was indicated earlier that an ambitious strategy was launched in 2004 with the purpose of strengthening the existing infrastructure and issuance of the adequate legal framework on digital confidence, electronic certification, and protection of international ICT property. At the international level, the main goal of that strategy was to sustain the role of Morocco in ICT as well as the monitoring of agreements. Management of strategy projects was also among the important strategy goals.

Developing the capacity building of ICT staff, as well as strengthening access to information were of great importance to the development of the ICT sector. Protecting copyrights and preserving the cultural values were not forgotten.

Session 4

Selection of the Steering Committee and Chairman

It was indicated earlier that an invitation to all members was extended. However, due to certain reasons, not all of WANA region members could attend the meeting. The nominations for the steering committee by the eleven representatives of each of the sub-regions were as follows:

None of the West Asian team members, with the exception of Iran, was present; therefore, Iran was elected to represent the sub region.

The Moroccan representative was the only member to attend the meeting from the North African sub region; therefore, Morocco was elected to represent this sub- region.

From the Arabian peninsula sub-region, only two representatives attended the meeting; Oman and Kuwait. They agreed that Oman was to represent this sub-region.

All members of the Nile Valley and the Red Sea attended the meeting. They elected Yemen to represent the sub-region.

For the Mashreq sub-region, representatives of Cyprus, Lebanon, Iraq, Syria, and Jordan elected Lebanon to represent the sub-region..

After the steering committee was elected, representatives were asked to nominate and elect a chairman for the steering committee. Two candidates were nominated: Dr. Mohamed Sallam (Yemen) and Robert Kalaily (Lebanon). Voting for the chairman resulted in equal votes for both of them. Dr. Mohamed Sallam was re-elected to lead the ICTSC for the next three years.

The Steering Committee members have agreed to co-opt Dr. Ahmad Rafea and Dr. Jamal Alrusheidat as honorary members of the new elected steering committee due to their past experiences in this field.

The Work Plan for the Next Three Years

The importance of the Information and Communication Technology (ICT) as an essential component for developing the agricultural sector in AARINENA member countries was highly recognized by GFAR. The international organization supported AARINENA in enhancing this sector through meetings, workshops, and new activities

The second Information and Communication Technology (ICT) Steering Committee meeting, which was held at AARINENA headquarter in Amman, Jordan, discussed future plans for the next three years.

For the purpose of identifying the future plan of action within the next three years, participants were asked to make a list of priorities that might be needed in their countries. A list of 17 items including tools, management aspects, studies and collaborative forms of help was developed.

It is important to note that all the items in the action plan list is of great importance for all countries, but due to the fact that AARINENA has limited resources, and due to the fact that each member country has their own priorities, it as suggested that each participant limits his/her choice to five priorities.

It was agreed that the first five items which will receive the highest points will be considered for the future plan of the ICT. The choices and their order according to their points are as follows:

- Term of Reference(TOR) for the focal point 13
- Identifying focal point in each country 11
- GIS use in WANA region 9
- Output from last steering committee (set of tools for NAIS) 8
- National policy and strategies ICM4ARD (collaboration platform from ZADI) 8
- Thematic linkages with RAIS 8
- Measure impact of ICT on agriculture development 7
- Advocacy issues (national and regional report) 6
- Re-engineering AARINENA web space and news events 5
- Human capacity building 5
- Regional search engine 4
- Institutions / project, Expert and Database 4
- Linkages between Research / Extension, Institutions and NARS 3
- Regional virtual library 2
- Electronic Newsletter 2

- Electronic listserv 1
- ICT/ICM can help countries which need support to build agriculture 1

It was agreed by the majority that identifying the Terms of Reference (TOR) for focal point is among the first priorities that should be considered in future ICT plans. The reason for that priority is to determine who is eligible to join the ICT /SC. It was mentioned earlier that due to the different background of the ICT/SC members, where the majority have IT specialties, some have backgrounds in management, while others have background in extension education or other disciplines. It was emphasized that all the ICT/SC must have a common language when discussing the issues related to ICT.

Identifying the focal point in each country member was among the second priorities of the participants. It is believed that based on the TOR mentioned above, which will be determined and described, each country member will have to appoint its representative based on these qualifications. No doubt that the selection process for each country will be easier if the TOR is clarified and determined.

The GIS training, application and installation were the third priority of all member countries. It was obvious from the presented reports and discussions that the GIS represent one of the most important systems that all countries are required. GIS training was on the top priorities of almost all countries.

The output of the last ICT/SC meeting was taken into consideration by all members. It was stressed out the importance of adopting the decisions agreed upon by the previous committee. It was pointed out that if the decisions won't be taken seriously, then the credibility of future meetings will be in jeopardy. Therefore, all participants agreed that a follow-up be made by special task force, to guarantee their adoption and application.

At the national level, there was a consensus that policies and strategies of each member country be targeted. It was suggested that policies, rules and regulations of each member countries must be reformulated to suite the new developments in the ICT sector.

Needless to say that reformulation the policies have become an important issues and a critical component of establishing a healthy ICT sector. Therefore, participants have agreed to address this issue and suggest the needed recommendations for its development.

With regard to the training needs of member countries, all participants came to an agreement that the following subjects, areas, topics, fields are in urgent need of training.

1. Web AGRIS / IMARK / AIMS
2. GIS
3. Expert System
4. NARIMS
5. Collaborative tools
6. Web space / Website for ARD
7. Vercon

8. Market linkages to information systems

Appendix 1

Program for AARINENA ICT General Assembly Meeting
April 25-26, 2006
Amman, Jordan

Tuesday April 25

09:00 – 09:30 Registration

Opening Session Chairman: Ajit Maru

09:30 – 09:40 AARINENA Statement (I. Hamdan)
09:40 – 09:50 GFAR Statement (A. Maru)
09:50 – 10:20 ICT Steering Committee Report (A. Rafea)
10:20 – 10:50 Coffee Break

International & Regional Organizations Session Chairman: Jamal Alrusheidat

10:50 – 11:10 AOAD (S. Osman)
11:10 – 11:30 FAO (M. Latif)
11:30 – 12:50 GFAR (A. Maru)
12:50 – 13:00 Discussions
13:00 – 14:00 Lunch

Country Report Session Chairman: Ahmad Rafea

14:00 – 14:20 Iran (T. Ebrahimi)
14:20 – 14:40 Oman (H. Dhuhli)
14:40 – 15:00 Kuwait (M. Al-Lingawi)
15:00 – 15:20 Jordan (J. Alrusheidat)
15:20 – 15:40 Coffee Break
15:40 – 16:10 Lebanon (R. Kalaili)
16:10 – 16:30 Iraq (A. Abdullah)
16:30 – 16:50 Sudan (M. Beshir)

Wednesday April 26

Country Report Session (Continued) Chairman: Taraneh Ebrahimi

09:00 – 09:20 Cyprus (G. Adamides)
09:20 – 09:40 Egypt (S. Idrees)
09:40 – 10:00 Yemen (M. Sallam)
10:00 – 10:20 Morocco (O. Sebbata)

10:20 – 10:40

Coffee Break

10:40 – 12:30

Discussion

12:30 – 13:30

Lunch

Election Session
Chairman: Ibrahim Hamdan

13:30 – 14:30

Election of the new ICT committee and chairman

14:30 – 15:30

Work plan for the next 3 years

Appendix 2
List of Participants/ ICT-RAIS Meeting

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