

Yemen Country Report

Regional Workshop for Strengthening National Information Communication Management Focal Units in Near East and North Africa Region”

AARINENA in collaboration with GFAR, FAO and the Ministry of Agriculture of Oman

Muscat, Oman 8-10 January 2008

Analysis of Agricultural Information Systems in Yemen

By

Dr. Mohamed Noaman Sallam

Director of Extension Projects & Programmes

Mr. Mohamed Al-Najhi

Director of Computer Department

Agricultural research and Extension Authority (AREA)

E-mail: area@yemen.net.ye

Fax: 00967-6-423914 Tel.: 00967-6-423913, P.O.Box 87148, Dhamar

Republic of Yemen

January 2008

1. Introduction

Information is very crucial element for enhancing effectiveness and efficiency of development programs. The Rapid expansion on the use of information technology and agricultural information system during the past 10-15 years came as a result of the growing needs of the agricultural sector. The reduction of the overall research budgets, the call on proper efficiency in research activities made it necessary to analyze and improve research programs.

The Agricultural Research and Extension Authority (AREA) is seen as the leading institute in the agricultural research in Yemen. It is considered as the major partner in the agricultural information systems at national, regional and international level. It is therefore important to improve the role of AREA in the development of agricultural information systems. This report provides an analysis of the development and use of information systems in Yemen, particularly within the agricultural sector.

2. SWOT analysis for information systems in Yemen

2.1 Strengths

- Coverage of AREA scope of work at all agro ecological zones (8 regional research stations)
- Presence of specialized research centers under AREA umbrella (Food and post harvest, livestock, genetic resources, renewable resources, Qat Research Unit)
- Presence of national agricultural training centre
- Project-based research developed as a new research approach of AREA
- Comprehensive data base system developed as data management tool for research , financial, and personnel information systems, using visual basic system and Microsoft

- access software
- Technology dissemination general directorate at national level established to insure technology integration and information disseminations well as to develop technology dissemination methodologies.
- Computer directorate at national level established to develop information network system.
- Establishment of well-equipped GIS section with varied specialized electronic data bases
- Information Focal Unit established
- Infrastructure for building local area network provided
- Improved awareness of information management among staff and decision makers at national level
- Availability of IT resources (100 computers)
- Internet is connected to most of the offices
- Possession of a relatively recent but acceptable website, (www.area.gov.ye).
- Availability of annual staff training program on various aspects including computer use, establishment of data bases, and computerized statistical analysis.
- Issuance of at least 4 scientific and technical information periodicals within the whole AREA system.
- Presence of local research coordinators network.

2.2 Weaknesses

- Proper strategies and policies in the efficient use and the development of ICT/M within AREA is lacking
- No specialized IT staff within AREA
- Weak data management at local levels
- Proper ICT technical skills are lacking
- Awareness of information management at local levels is lacking
- Low capacity building for ICT/M staff
- Lack of Staff motivation
- Lack of interconnectivity between AREA headquarters and regional research stations and centers
- Organizational overlapping and Task Duplication relating to documentation, information and communication/dissemination.

2.3 Opportunities:

- Information policy changes encouraged by donor agencies
- Updated agricultural statistics within MAI
- Improved agricultural marketing information systems within MAI
- Established General Directorate of Extension and Multi Media within MAI
- Electronic government
- National Information Centre

2.4 Threats:

- Lack of National information strategies and policies
- Lack of IT enabled services

- Lack of information awareness among decision makers within different ministries.
- Lack of national IT staff recruitment strategies
- Lack of incentives for ICT staff within the public sector
- Lack of data exchange systems between national agencies
- Lack of standards, principles and procedures for enforced ICT/M application
- Weak links to AGRIS and CARIS systems.

3. Information Management

3.1 Within Agricultural Research Institutions:

The Agricultural Research and Extension Authority (AREA) is the main agricultural research institution in Yemen that serve as an important source of agricultural farm information at the national level. AREA has 13 branches and centers of which 8 regional research stations, 4 specialized national research centers, and one national agricultural training centre (NATC). The 4 specialized research centers are concerned with food and post harvest research, livestock research, renewable natural resources, and genetic resources collection and preservation.

At the national level, AREA has three general directorates concerned with research planning, monitoring and evaluation, information management and exchange. These general directorates are the General Directorate of Research (GDR), the General Directorate of Information and Documentation (GDID), and the General Directorate of Technology Dissemination (GDTD). GDID is responsible for documentation, reorganizing research reports, and planning training programs. GDTD is responsible for data collection, data processing, data retrieval, and publishing information through leaflets, newsletters and periodical journals.

AREA has its own library and documentation section where all received books, journals, bulletins, and reports are stored and made ready for use by researchers, university students, and other information users. Until the year 1990, AREA Library and documentation section was involved in receiving AGRIS information packages and started to develop data entry under CDS/ISIS run by DOS system. But this was stopped, as the responsibility of this work was shifted to the Documentation and Agricultural Information Centre in the Ministry of Agriculture and Irrigation. The DAIC, then could not continue with the process due to several reasons of which lack of specialized persons and the weak links with local and regional institutions.

Research Information is published in AREA scientific journal, research and extension linkage periodical, and AREA compendiums of improved and new research technologies. The General Directorate of Technology Dissemination is responsible for processing and publishing research information through the above mentioned journal and periodicals. Research articles are submitted to the specialized publishing section within GDTD, where 3 copies are sent to different auditors before it is published. To communicate its own research outputs, AREA has its own website, www.area.gov.ye.

GIS & Remote Sensing Department was established in 1995, by AREA and an FAO funded project, to make use of available data in various fields soil, land use, water, agronomy etc. for the design and implementation of rural land use plans. The section was equipped with hard ware and GIS & Remote Sensing software as ArcInfo, ArcView and analysis programs in GIS, AIMS and ERDAS

Remote Sensing in activities. Several agricultural maps were produced using the new computerized technology of GIS and Remote Sensing applications using the following data sources:

- Satellite imagery - Land sat TM 7 band (27 scenes)
- Spot Satellite imagery.
- Aerial photos.
- Topographic maps

An ICT/M development move towards establishing information systems within AREA was made in the year 2000 by initiating financial and personnel information systems. In the year 2005, a directorate of computer system was established. Some progress was also made by the attempts of AREA to established its own local area network. This attempt is still on progress.

For the development of research information management system, a new move was made in the year 2005 where the yearly research activities were converted into 3-5 years research projects. This move aimed at linking research into clear input and output continuum. A research med-term plan (2006-2010) that compiles all research projects was developed.

A National Information Focal Unit (NIFU) was established in the year 2006 under the supervision of the General Directorate of Technology Dissemination. The new focal unit, with the support of a previously formed information network development team, started to build a data base system that provides a data entry system for research institutions, research experts, research projects, and research outputs using visual basic system and Microsoft access software.

Research priorities are defined through surveys and joint meetings and linking mechanisms with extension and rural development agencies. Extension staff participates with researchers during on farm technology adaptation and integration. Annual meeting is also held at the research station in the presence of extension staff and other concerned stakeholders to discuss research and extension progress reports and future plans.

3.2 Within other related institutions:

At the central level, different institutions and departments that deal with agricultural information could be found within the different ministries of the public sector. Within the Ministry of Agriculture and Irrigation, the General Directorate of Agricultural Statistics (GDAS), the General Directorate of Agricultural Marketing (GDAM), the Documentation and Agricultural Information Centre (DAIC), the General Directorate of Agricultural Extension and Multi Media (GDEMM), are all concerned with collecting, processing, documentation and communication of agricultural information. The Central Statistics Organization (CSO), within the Ministry of Planning and Development (MPD), is also an important source of agricultural statistical data.

The GDEMM is supervising agricultural extension and multi media activities in the whole country. It provides financial support for all extension directorates at governorates level. Extension information are published by the GDEMM through its extension bulletin. Extension messages are broadcasted by the GDEMM through the national radio and television programs.

The GDAS is the most specialized directorate in agricultural information/statistics within the Ministry of Agriculture and Irrigation (MAI). The directorate is a central organization that is

concerned with the establishment and renewal of the agricultural database/statistics. The Directorate conducts a general agricultural census every 10 years. Processed data/statistics is then yearly renewed by conducting sample surveys in the different governorates of the country. Agricultural statistics are processed and published in a yearly agricultural statistics books.

The GDAM is also dealing with market information systems in various fields such as price information, import and export information, and marketing extension information. Marketing information systems are developed through assistance of the European Union. Market information are collected from various sources of which agricultural markets are the major source. This information are processed and communicated through the yearly marketing report and some media channels. GDAM has also its own website, www.yemengdam.com.

CSO is a central organization that deals with general statistics including agricultural information, which are mostly used by the Ministry of Planning and Development for the preparation of development plans. While other organizations such as NATC, MMC, and AIDC process and utilize agricultural information for training, dissemination and training purposes.

4. Information Technology Assessment

During the past 10 years, a rapid expansion on the use of information technology and agricultural information system took place in the Yemen. More than 20 new governmental and non-governmental institution concerned with research and information in various fields were established since the year 1995. Also new information technology was introduced, as many computer systems were installed and many government and private communication and telecommunication companies were established.

Nevertheless, the above mentioned expansion of information and communication technology was not associated with the development of proper national information and communication strategies and policies. Due to lack of clear policies, confusion and mismatch in division of tasks was created between the different government institutions.

During the past 10-15 years, there has been also a lot of emphasis in the development of agricultural research and rural development strategies to achieve efficient use of agricultural technology. The different agricultural development strategies pinpointed the need for complementarity among the development partners concerning the exchange of information and experience. Decentralization, and the effective use of information systems based on stakeholders needs were among the important points emphasized in these strategies.

However, the use of properly organized agricultural information systems and information technology could not grow parallel with the objectives of the new strategies. In general, it could be indicated that there is still a lack of a real basis of information systems, particularly in the agricultural and rural development sectors. Despite the introduction of computerized information systems, the capabilities of these systems are still exaggerated, as the critical aspects of information systems, such as the need for accurate data to strengthen decision making, are ignored.

Moreover, there is a lack of survey data on information systems, as very few studies or surveys are conducted.

Accordingly, within the government budget, there has been a slight increase in the allocated funds for information and communication technology. However, this increase in budgets was not enough to develop a comprehensive information systems not only in terms of the introduction of new computers but in terms of improving mechanisms for collecting, analyzing, and exchange of agricultural information that are relevant, accurate and useful for decision makers. Moreover, there is no clear policy for recruiting new IT specialists, particularly within the public sector as compared to the private sector.

5. Required support to improve ICT/M in the future

Donor agencies and external support could play an important role in facilitating the development of agricultural information systems in Yemen. Based on the above analysis of information systems, there is a need for external assistance in the following areas:

- Institutional capacity building and staff training in information systems' development through TCP projects.
- External support in mobilization of financial and human resources to support building a comprehensive agricultural information system.
- Technical support in the development of sustainable links with regional and international agencies related to ICT support and development.
- Encouraging advocacy activities and exchange of ICT successful stories between member countries.