

**THE WORLD AGRICULTURAL INFORMATION CENTRE  
(WAICENT)  
FAO's INFORMATION GATEWAY**

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The specific components which make up the World Agricultural Information Centre at the Food and Agriculture Organization of the United Nations (FAO), are described in this paper.

WAICENT comprises three principal elements which are interactive and complementary: FAOSTAT, for the storage and dissemination of statistical information, FAOINFO, which covers hypermedia information, and FAOSIS which covers very specialised information systems.

WAICENT has brought a new strategic information approach to the Organization vis-à-vis information production and delivery, along with two fundamental paradigm shifts - paper versus electronic distribution and distribution versus central storage. In this paper particular emphasis is given to the public information initiatives under WAICENT; the specialised information services provided by the various departments and delivered through WAICENT; the full-text document storage and retrieval system study.

FAO is faced with increasing demands to prepare, manage and disseminate the information that it produces to the widest possible audience, in the most efficient manner, utilising the latest technologies and at less cost.

The WAICENT system was created at FAO to bring together and refocus the multiple information related enterprises, databases and publishing tasks of this large, multidisciplinary, international institution. There was also a need to reorient these activities to take advantage of the rapid developments in information technology.

The principal aims behind the creation of WAICENT were:

- the need to increase the extent of information coverage handled by FAO;
- improve and streamline in-house data management;
- strengthen and simplify the flow of information to and from the Member Countries;
- reduce processing costs in all phases of receiving, treating and disseminating information;
- reach FAO's target audiences more effectively and at less cost.

The practical advantages are principally seen as three:

- ❶ to capitalise on the intellectual output of the Organization through the maintenance of an institutional memory in electronic format;
- ❷ to increase the availability of information to multiple users, bringing greater efficiency and cost-effectiveness;
- ❸ to reduce the burden to Member Countries in accessing FAO's information resources.

## **1 WAICENT - the „umbrella“ for FAO’s information dissemination**

The task of WAICENT is to foster a corporate atmosphere - to co-ordinate information, and, through a co-operative and well-structured approach, enhance the content, improve the quality and widen still further its outreach. This is the reason why WAICENT is termed an “umbrella”: the connotation is one of cumulating or protecting, not of controlling.

As previously mentioned, WAICENT is made up of three interactive and complementary components:

FAOSTAT, for the storage and dissemination of statistical information;

FAOINFO, which covers hypermedia information (viz. Text, images, audio and video); and

FAOSIS, covering specialised information systems.

### *1.1 The First Component - FAOSTAT*

This system contains a collection of time-series data on demography, agriculture, fisheries and forestry covering 210 countries and territories to date, merged into one statistical database service. There are data on trade flows, food aid, development assistance, and the results of the World Agricultural Census on household budget and food consumption surveys. Software was developed to allow users to select and organise the statistical information into tables and charts that meet their individual needs. FAOSTAT is being made available on the Internet, CD-ROM, and diskettes, as well as in printed yearbooks and other special publications. The original statistical data is supplied by each country or intergovernmental organisation and is then mapped in a common format, merged and put into one database by FAO.

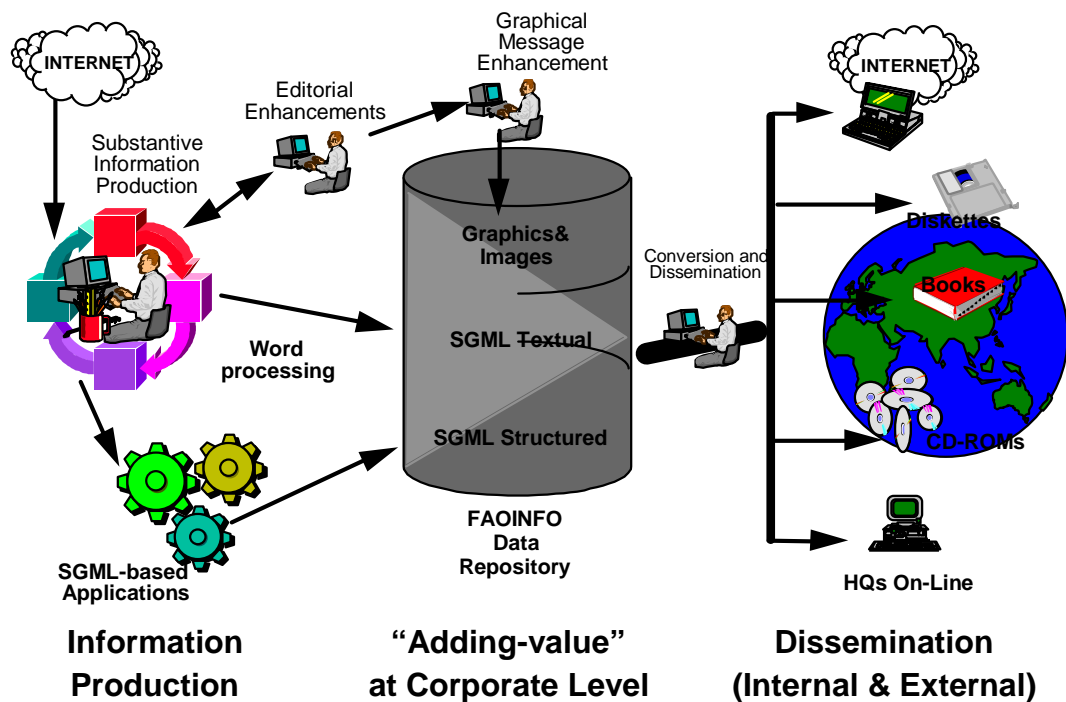
### *1.2 The Second Component - FAOINFO*

The intent of FAOINFO is to develop the infrastructure and procedures to prepare, organise, store and disseminate textual and hypermedia information. Like FAOSTAT, a key activity of this group is to manage the change in the way the information is prepared and handled by the Organization.

Word processing templates have been designed and are being implemented so that documents are properly formatted as they are being prepared in the departments. The records are then automatically converted into a structured document format in SGML (Standard Generalized Markup Language), processed system and put into a corporate electronic document repository. There they are indexed by the FAO Documents Unit and the citations added to the FAODOC (FAO Documentation) and AGRIS (the International Information System for the Agricultural Sciences and Technology) databases, with links back to the full text records. The data can also be easily output in HTML format for the FAO World Wide Web pages and in other appropriate formats for printing or other forms of electronic distribution.

A new MediaBase system for hypermedia files, such as photos, audio, video, and graphics, has also been put into place, with the capability to link these files to the appropriate documents in the corporate repository. The new system can also be accessed and searched separately to find photos and other graphical materials to be used in new publications or on the Web.

The overall intent is to refocus the whole publishing system to a database centric one where the information is prepared in a decentralised mode but managed and made available through a centralised service for multiple use, as shown in the diagram below:



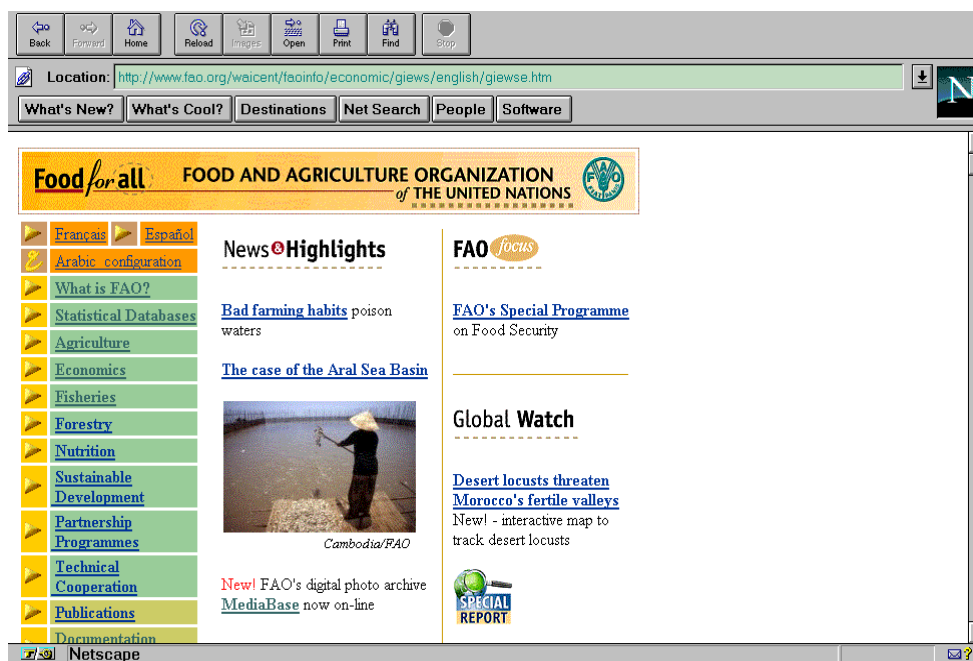
**Publications information flow**

### 1.3 The Third Component - FAOSIS

FAOSIS, like FAOSTAT and FAOINFO, brings together information under its own discipline-heading. At present, there are three major information systems accessible under FAOSIS :

- the **Global Information and Early Warning System on Food and Agriculture (GIEWS)**, provides regular bulletins on food crop production and markets at the global level, and situation reports on a regional or country-by-country basis;
- the **Domestic Animal Diversity Information System (DAD-IS)** is the key communications tool for the Global Programme for the Management of Farm Animal Genetic Resources (AnGR); it provides extensive searchable databases, tools, guidelines, references and contacts;
- the **FAO Emergency Prevention System (EMPRES)** for transboundary animal and plant pests and diseases. The term “transboundary” refers to major epizootic diseases that are of significant importance in economic, trade and/or food security importance; basically, where the control and management of the importation of animals require inter-country co-operation for the prevention of major emergencies. The system has two components: Livestock Diseases, and Desert Locust Management.

## WAICENT as it appears on the Internet



### FAO's Homepage at January 1997 (<http://www.fao.org>)

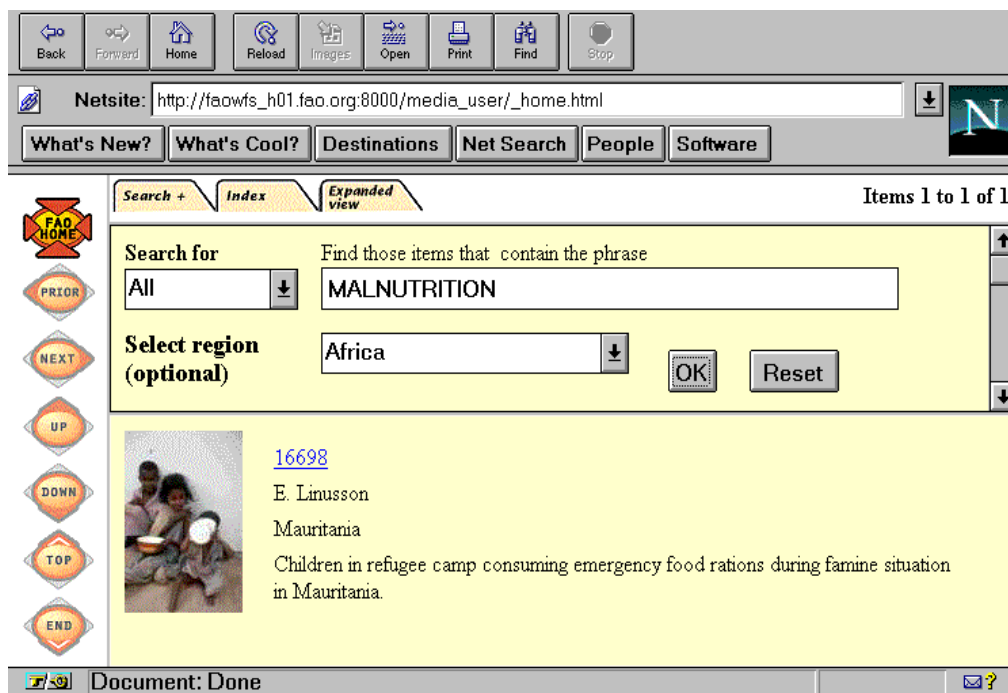
The Internet is certainly the newest and liveliest method for information dissemination, and has attracted a lot of support and co-operative effort within the Organisation. For FAO, it is also an important tool for reaching a variety of new audiences in the developing and the developed world.

The present Homepage of WAICENT is the result of much discussion about user needs and the visual concept of accessible information. In developed, but more importantly, in developing countries, network connections and transmission speeds limit users as to what they can access over the Internet. A highly colourful graphic-oriented Homepage is pleasing to the eye but in practical terms can lead to users renouncing the use of a Web site because of the high time/cost ratio that elaborate graphics entail. On the other hand, we also wish to deliver an extensive range of information products that will satisfy a wide variety of users. Consequently, we attempt to provide a variety of products via Internet Web services. Being an international organisation we are also attempting to provide as much information as possible in at least English, French and Spanish, with work currently underway to expand the Web service to include Arabic.

As part of a project to develop an electronic magazine or news service that we call CERESTronic, we have created a dynamic homepage with news stories regularly added describing FAO's activities and projects. This is the white area of the page shown above. This project has been developed in co-operation with FAO's Information Division (GII), with the objective of communicating on the Internet the Organization's first "message" - its Homepage.

General interest stories about FAO's work, how experts in developed or developing countries are participating in FAO's programmes, how a particular field project is affecting individual farmers, and how others are utilising its technical expertise - are transmitted under this system. (*For further information please contact Mr A. Marx, e-mail address: [Andrew.Marx@fao.org](mailto:Andrew.Marx@fao.org).)*

The new hypermedia *MediaBase*, was also developed in conjunction with the Information Division. Users can search the MediaBase for photos, video clips or other graphic files and are provided within seconds with „thumbnail“ previews of all the pictures fitting their request, together with a short caption and basic information about when and where the picture was taken. Clicking on the number that identifies a picture will bring up a larger version and more detailed textual information. Individuals, institutes, NGOs and journalists are able to access and download pictures from a database that includes thousands of photographs and information graphics.



**MediaBase – FAO’s digital photo archive (example of request generated)  
 (http://www.fao.org/news/1997media-e.htm) – click on MediaBase**

During the World Food Summit last November, when over 15,000 people including heads of state, senior government ministers, other delegates and journalists gathered in Rome to map a course towards greater world food security, we used a new system to quickly create dynamic pages of information combining text, photos, audio, and video data. In fact, during the Summit we were able to digitize the video televised from the Plenary Hall and have it up on our Website before the speaker even left the platform. Observers of the Summit who could not attend could follow the events and have the full text of related documents available anywhere in the world. Several CD-ROM versions containing our Web pages along with the Web browser software were also produced and distributed as an alternative for those not having Internet access. New versions of this CD product will continue to be produced in the future.

WAICENT, in its umbrella-type role, provides the overall infrastructure and support for the Internet service but each department and division is responsible for deciding what information they wish to put up and for preparing the data. Each department has its own homepage, which vary considerably in design and structure. This has been done purposely to allow all of us the flexibility to experiment with different approaches. Below are two examples of departmental homepages, viz. the Economics and Social Department (ES), and the Fisheries Department (FI):

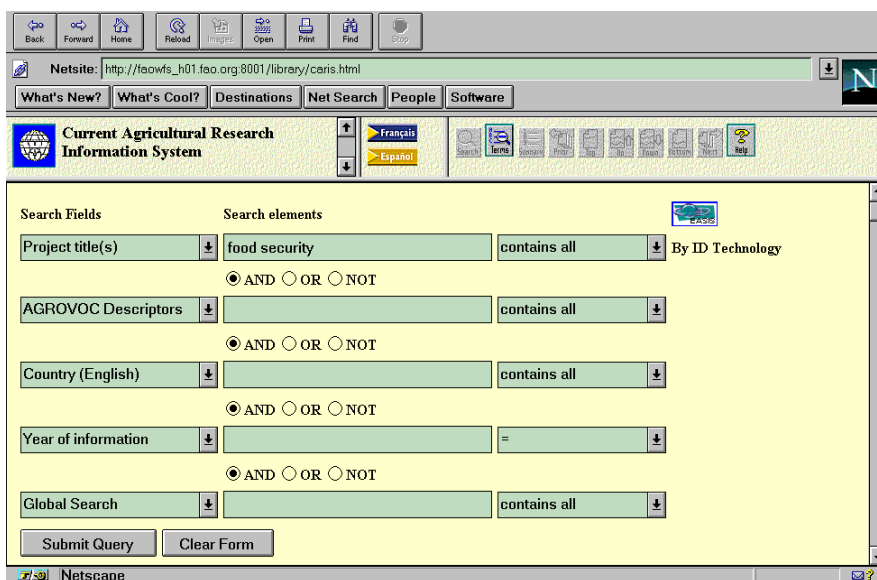
**Economics and Social Department (ES) Homepage**  
 (http://www.fao.org/waicent/faoinfo/economic/economic.htm)

**Fisheries Department (FI) Homepage**  
 (http://www.fao.org/waicent/faoinfo/fishery/fishery.htm)

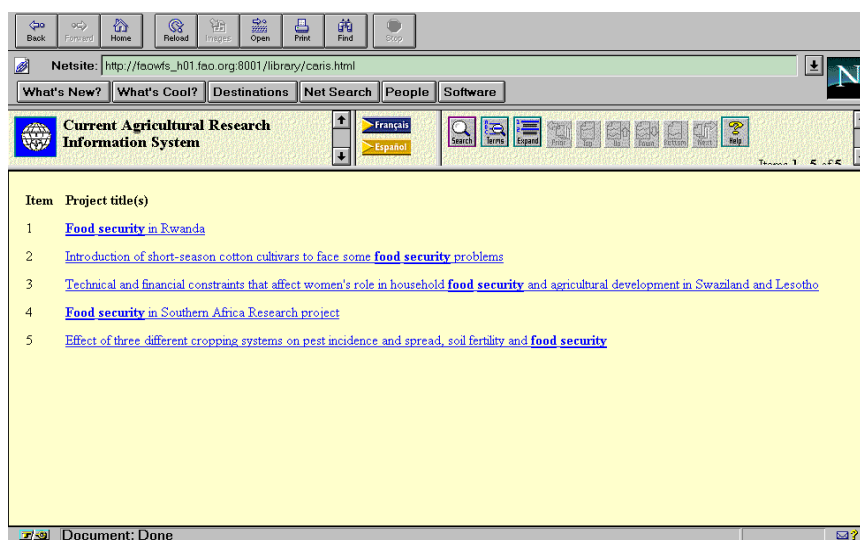
There are at present several on-going projects under FAOINFO: the public information text and multimedia service; a Virtual Library project to make library and other information resources available on the staff's computers; and the full-text document storage and retrieval system project. The

bibliographic database AGRIS is part of the Virtual Library project, along with the FAODOC database and the David Lubin Memorial Library's On-line catalogue.

Incorporation of the Current Agricultural Research Information System (CARIS) into WAICENT allows a user to search by any keywords and quickly obtain data about on-going research projects in the developing countries including information on the current status of the project; available, relevant literature; and, in the future, the e-mail address of the researchers and the URL Internet address of the research institutes. The CARIS database is on the Web now:



**CARIS Database**  
**([http://faowfs\\_h01.fao.org:8001/library/caris.html](http://faowfs_h01.fao.org:8001/library/caris.html))**



**The results of the above search on CARIS database**

For our FAOSTAT interactive Web service, special software was developed allowing users to select and organise the statistical information into tables and charts that meet their individual requirements. FAOSTAT provides a regularly updated table of hits/database downloads for each calendar month. Below, the Homepage for FAOSTAT, and recent statistics on usage.

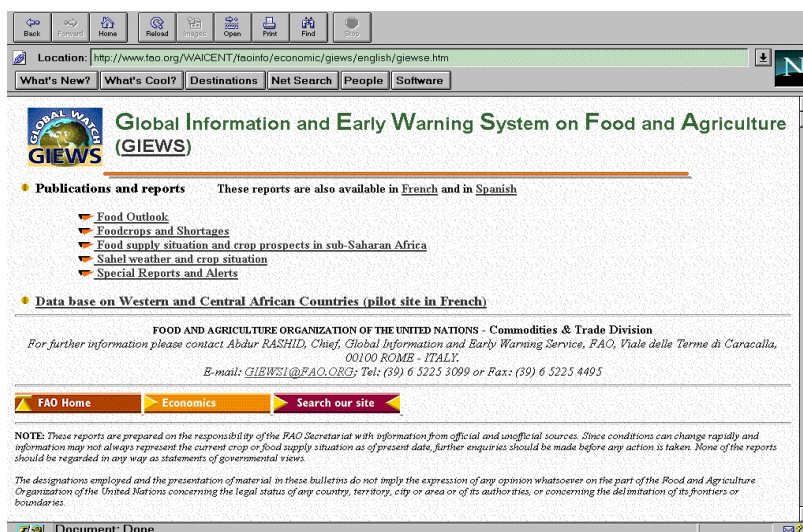


### The FAOSTAT Statistics Database (<http://apps.fao.org/default.htm> )

<i>Month</i>	<i>Page Hits</i>	<i>Accesses</i>	<i>Records downloaded</i>
November **	70,456	33,686	2,926,482
December	48,750	22,470	2,577,415

\*\* November was an exceptional month for FAOSTAT because of the interest in FAO's work generated by the World Food Summit, held in Rome, at FAO Headquarters.

Under the *FAOSIS* initiative other specialised database services are regularly being added to the Internet service with some available on CD-ROM or on diskette. Examples include the GIEWS system noted earlier, and shown in the next illustration.



### Global Information and Early Warning System on Food and Agriculture (GIEWS) (<http://www.fao.org/waicent/faoinfo/economic/giews/english/giewse.htm>)

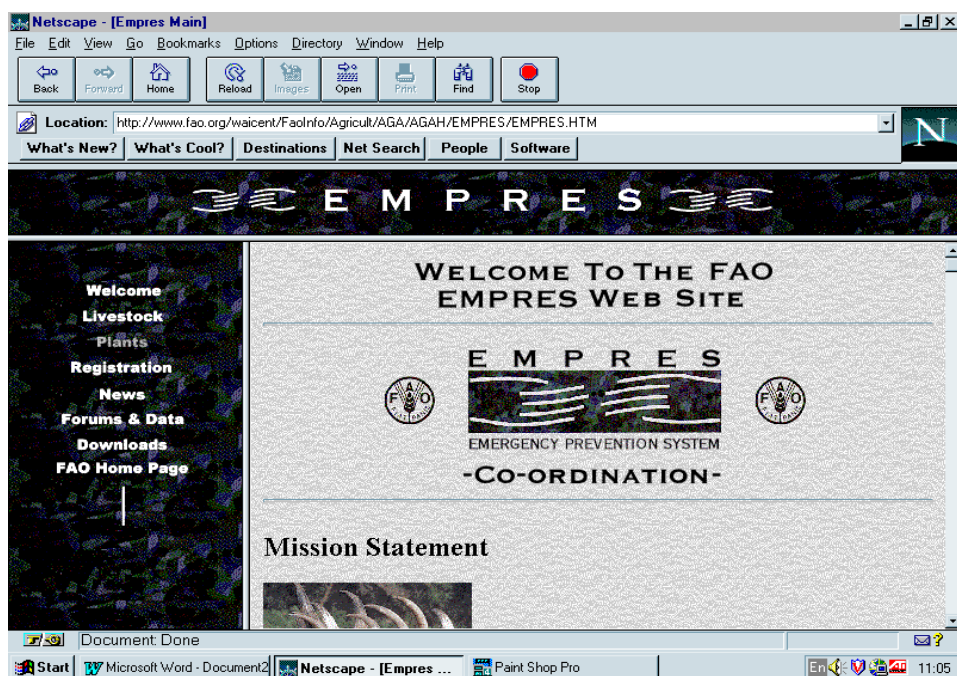
(GIEWS is developed by the Economic and Social Department (ES); for further information please contact Mr R. Marsili, e-mail address: [Raffaello.Marsili@fao.org](mailto:Raffaello.Marsili@fao.org))

DAD-IS and EMPRES are two other services provided :



<http://www.fao.org/waicent/faoinfo/agricul.htm>

(go to “Animal Production & Health” - “Animal Production Service”) (DAD-IS is developed by the Agriculture Department (AG); for further information please contact Mr K. Hammond, e-mail address: [Keith.Hammond@fao.org](mailto:Keith.Hammond@fao.org)).



<http://www.fao.org/waicent/faoinfo/agricul.htm> (go to “Divisions”)

(EMPRES is jointly managed by the Animal Health Service (contact person Mr M. Rweyemamu, e-mail address: [Mark.Rweyemamu@fao.org](mailto:Mark.Rweyemamu@fao.org)), and the Plant Protection Service (contact person Mr A. Hafraoui, e-mail address: [Abderrahmane.Hafraoui@fao.org](mailto:Abderrahmane.Hafraoui@fao.org)) both of the Agriculture Department - AG).

## **2 WAICENT in summary**

WAICENT is an example of how information activities can be integrated across departments and divisions, with reciprocal advantages allowing for greater efficiency and overall lower costs for the Organisation. WAICENT provides the corporate tools for electronic processing and dissemination, making information equally available to all units, including those outside Rome, and eliminating unnecessary duplication of files. Individuals, institutions, organisations and governments all over the world may access the WAICENT centralised database through the FAO Homepage on the Internet. Each department in FAO has presented its wealth of information sources independently; conformity only lies in the search mechanism.

By providing exhaustive on-line information through the World Wide Web, along with complementary services on CD-ROM, diskette and in print, FAO ensures that countries which face emergency situations will be alerted fully and ahead of time, and are now able to have real-time contact with experts, and immediate relief programmes.

Results can be measured in part by the usage figures from our Internet Web and Gopher services, as well as the feedback that we have received from users. Usage has grown from just under 400,000 "hits" in March of last year to over 905,500 in January - a hit being defined as a page of information accessed or a database record displayed. Records downloaded reflect a proportionally greater increase from 300,000 records in March 1996 to over 5,800,000 in January 1997. As a sign of the international interest raised by the World Food Summit- mentioned earlier in this paper - usage jumped to over 2,000,000 hits in that month alone. The overall usage trend should increase in the future as more information is made available on the site and as telecommunication services continue to improve and expand world-wide.

A great deal of work remains to be done: we aim to provide new subject-searching features, additional database services, and a greater depth of content. The mechanism of WAICENT generates a continuous, circular movement of information around the globe produced by the countries and sent to FAO, where it is analysed, interpreted and organised and then disseminated on diskette, on CD-ROM, in print or on the Internet. This is the system and the path of the future: information collected and then disseminated in the form most appropriate to the audience requesting it.

The era of information technology offers new tools accompanied by a new, sophisticated vocabulary: "accessibility", "user-friendliness", "cross-platform portability", etc. WAICENT is one of the results made possible by this technology.