



EC-FAO Food Security Information
for Action Programme



GIIEWS WORKSTATION

Food Security Information Management System



<http://www.foodsec.org/workstation>



Global Information and
Early Warning System
- on food and agriculture [GIIEWS]



The GIEWS Workstation is financed by the European Commission as part of the EC-FAO Food Security Information for Action Programme
Web site: www.foodsec.org

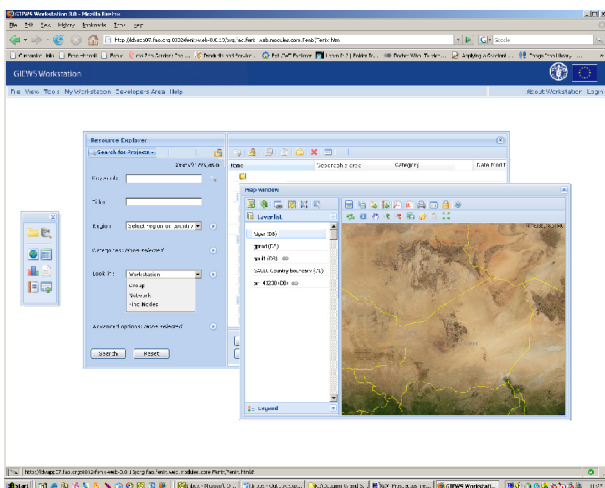
The GIEWS Workstation Food Security Information Management System

Food shortages or famine crises are the consequence of a combination of economic, environmental and social factors in which both local and global dynamics come into play. Decisions on food security interventions should be based on the integrated analysis of all these aspects. Indeed, the effectiveness of international response to potential or actual crises partly depends on reliable and timely information being available in a usable format.

analysis. The GIEWS Workstation proposes a decentralized, web-based, geo-referenced information management solution that facilitates the collection and sharing of harmonized and standardized food security data. It also provides a number of data analysis tools designed specifically to process multisectoral information in a variety of formats.

The GIEWS Workstation Information Management System includes:

- a multidisciplinary database structure;
- GIS mapping and data analysis software tools;
- a data exchange module that enables data sharing between the various workstations installed in different countries (workstation "nodes").



However, setting up centrally-managed food security databases to include sub-national level data can prove to be over-complex. On the other hand, the fragmentation and lack of standardization of information between different countries and institutions is not conducive to integrated data

The application comprises an independent and integrated data management system designed to support the analytical capacity of national and international institutions in terms of food security policy formulation and emergency interventions. Moreover, all the workstations installed at key institutions in different countries form a network across which information can be shared directly.

The GIEWS Workstation is entirely built on open source technology to ensure that it remains freely available to its intended beneficiaries – i.e. local and national institutions, international organizations and NGOs.



Data Analysis

Analytical tools are required to derive vulnerability and food insecurity indicators from primary and secondary data. In addition to a geo-referenced, multidisciplinary and integrated database structure, the GIEWS Workstation includes software functions such as GIS mapping tools, tables and charts that enable users to perform cross-analyses of multidisciplinary data and determine the food security implications of environmental and man-made factors.

Food security information is managed in the GIEWS Workstation as GIS map layers, satellite images (e.g. rainfall, vegetation distribution), environmental, economic and demographic data. Crop calendars and other utilities are also available.

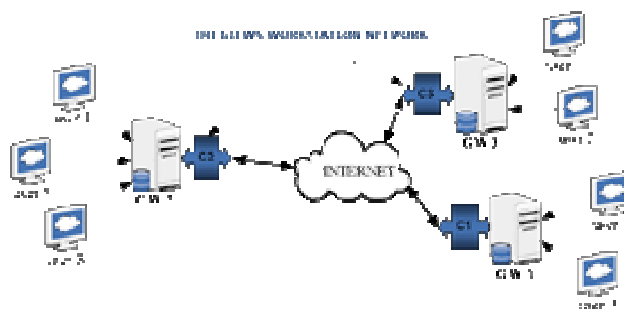
Using the tools provided, users can process both historical and recent data so as to detect any anomalies in environmental, social and economic factors (e.g. drought, excessive increases in market prices, etc.) that may reduce local populations' capacity to access key food items. Text functions are included to facilitate the compilation and dissemination of early warning messages.

The GIEWS Workstation is moreover currently developing a software tool that will implement the **Integrated Food Security and Humanitarian Phase Classification (IPC)**. The IPC is an internationally-accredited food security framework that classifies the varying phases of food security and humanitarian situations based on outcomes on lives and livelihoods, where each phase is associated with a strategic response framework. The tool will allow contributors to enter and store data related to the phases and outcomes defined by the

IPC, as well as associate GIEWS Workstation data and information from other sources to the IPC templates. This will make it possible to keep track of IPC sessions over time and give increased transparency to the IPC process by making the relative analytical data and results readily available.

Data Exchange – The GIEWS Workstation Network

The GIEWS Workstation is freely distributed to local and national institutions, international organizations and NGOs worldwide. All installed Workstations are linked by a peer-to-peer communication system that enables all "nodes" in the GIEWS Workstation network to share data directly between them without having to go through a central server.



The exchange of information is facilitated by a common database structure and a high level of standardization of data formats and content. This type of data sharing bypasses many of the problems encountered with unreliable internet connections in some countries, as files can be downloaded in several sessions.

The GIEWS Workstation in Central America

In spring/summer 2007, the GIEWS Workstation was demonstrated to key governmental institutions and organizations responsible for food security and early warning in Guatemala and El Salvador. The Workstation was seen by national and regional institutions and international organizations such as FEWSNET to have the potential to strengthen and complement existing food security and early warning systems in the region.

At October 2007, workstation “nodes” had been installed and activated at the following institutions:

Guatemala

INE (Inst. Nacional de Estadística)
INSIVUMEH (Instituto Nacional de Sismología, Vulcanología, Meteorología e Hidrología)
MAGA (Min. de Agricultura, Ganadería y Alimentación)
MFEWS (Mesoamerican Famine Early Warning System – USAID)
SESAN (Secretaría de Seguridad Alimentaria y Nutricional)
SEGEPLAN (Secretaría de Planificación y Programación de la Presidencia)

El Salvador

STP (Secretaría Técnica de la Presidencia)
DIGESTYC (Dirección General de Estadística y Censos)
SNET (Servicio Nacional de Estudios Territoriales)
MS (Ministerio de Salud)
MAG (Ministerio de Agricultura y Ganadería)

This means that while the Workstation provides national and local institutions with an efficient means to independently manage and exchange their data locally and at a national level, it also enables information to be shared globally across a network of partners, such as international organizations and NGOs who need access to consistent, harmonized and up-to-date country data. Over time, this should also result in increased uniformity in data management practices.

Promoting International Standards

The use of different systems of data classification and definition can adversely affect food security information exchanges and comparability of data from different sources, and it is generally agreed that the need to establish standardized methods for data collection and management remains an important issue. The GIEWS Workstation is addressing these concerns by promoting the implementation of international standards.

In line with its standardization approach, the GIEWS Workstation implements and contributes to the definition, among others, of the following standards:

The Harmonized Commodity Classification and Coding System or HS

The HS is an international six-digit commodity classification managed by the World Customs Organization (WCO). The WCO ensures its uniform interpretation and application and updates it to incorporate the latest trade, technology and security developments so that it continues to reflect the nature and structure of international trade. At

March 2006, more than 200 countries and economic or customs unions, accounting for almost 98% of world trade, were using the HS¹. Currently, the latest review of the HS, the HS 2007 version, has already been implemented in the GIEWS Workstation.

The Global Administrative Unit Layers or GAUL

The Global Administrative Unit Layers (GAUL) is a FAO initiative developed by the GIEWS Workstation in the context of the EC-FAO Food Security for Action Programme.



The GAUL system strives to compile and disseminate the most reliable spatial information on administrative units for all countries in the world and is designed to: a) overcome the fragmentation of the global dataset which occurs when administrative units are digitized on a country-by-country basis; b) promote a unified coding system that reduces maintenance efforts; and c) keep historical track of any changes in the shapes and extent of administrative units.

GAUL contributes to standardizing spatial datasets representing administrative units in coordination

¹ Source: <http://www.wcoomd.org/ie/En/en.html>

with other international initiatives such as the Second Administrative Level Boundaries (SALB).

The ISO 19115 metadata standard

The ISO 19115 is one of the standards most widely-adopted for the description of geographic information and services. It provides information regarding the identification, extent, quality, spatial and temporal dimensions, spatial reference and distribution of digital geographic data. The ISO 19115² metadata standard is implemented by the GIEWS Workstation in collaboration with GeoNetwork³.

The International System of Units (SI).

The Workstation adopts the **SI** standard and provides for the conversion of other local and national systems of units into this system.

Distribution, Training and Support

The GIEWS Workstation is designed as a decentralized, web-based information system whose components can be reorganized, reconfigured and extended to meet changing conditions and demands. The Workstation is entirely based on open-source technology and is available free under

² Source:

<http://www.iso.org/iso/en/CatalogueDetailPage.CatalogueDetail?CSNUMBER=26020&COMMID=&scopelist=>

³ **GeoNetwork opensource** is a standardized and decentralized spatial information management environment, designed to enable access to geo-referenced databases, cartographic products and related metadata from a variety of sources, and enhance spatial information exchange and sharing between organizations and their audience through the internet.

Source: <http://www.fao.org/geonetwork/srv/en/about>

the GNU (General Public Licence) to national and local institutions, international organizations, humanitarian agencies and NGOs operating in food security-related fields.

The GIEWS Workstation package includes:

- **A software application**, including an integrated database structure and GIS mapping and data analysis tools, that provides independent and comprehensive data storage and management functions;
- **A data exchange module** linking all Workstations in the GIEWS Workstation Network, which allows users to share data directly between Workstation nodes without having to go through a central server;
- **Technical support and training** during all stages of installation and development of the Workstation.

The Workstation's modular structure also ensures its flexibility and adaptability to changing needs over time. Individual institutions are encouraged to adapt and build personalized tools to meet their specific needs while remaining consistent with the overall system architecture. This means the conceptualization and design of the system's components is a participatory process involving the national partners, who play a major role towards ensuring data consistency and the relevance of the software for country use.

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