

# GIEWS Workstation

Global Information and Early Warning System

**Fabio Grita**  
GIEWS Workstation Coordinator  
ESCG, FAO  
Email: [fabio.grita@fao.org](mailto:fabio.grita@fao.org)



# Definition

---

A software application designed to give support to food security policy

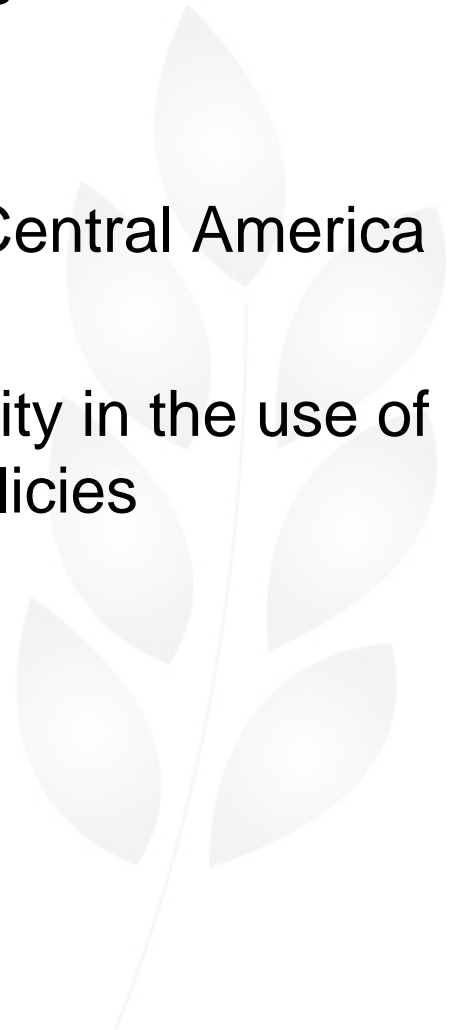
A means for collecting and disseminating data and early warning messages



# Context

---

- Developed by the **EC-FAO Food Security Information for Action Programme**
- 20 countries in Africa, CIS, SE Asia and Central America
- Main objective: strengthen national capacity in the use of information for improving food security policies



# GIEWS Workstation Goal

---

Harmonize food security and early warning within each country and across countries

Strengthen analytical capacity to support food security policy formulation and emergency interventions



## More in Detail

---

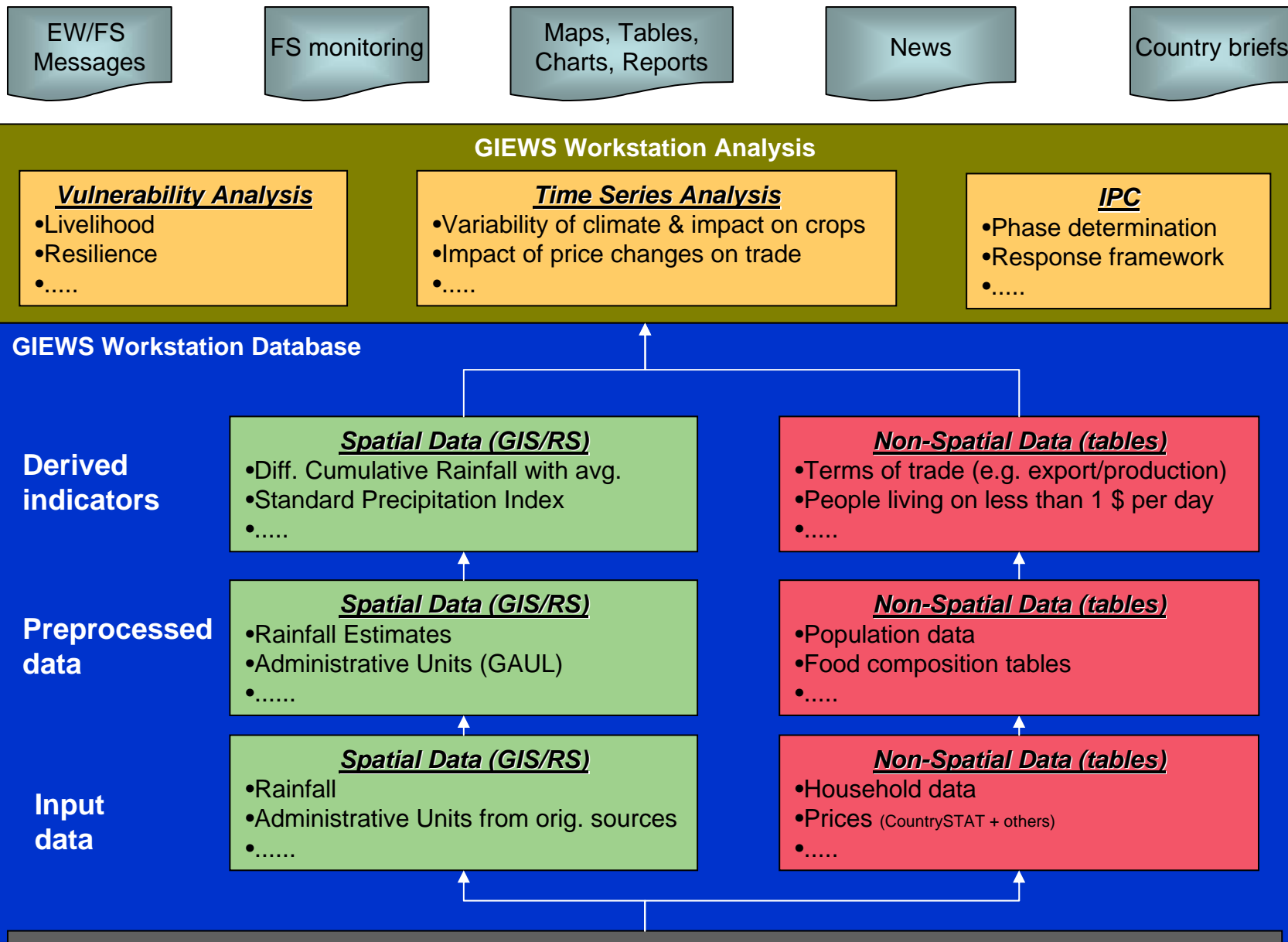
- A geographic (GIS)- and web-based information system managing remote sensing, GIS, database and text data at global and country levels
- A system that helps storing and accessing information in consistent and standardized ways
- An analytical tool availing data and applications to display and process data for early warning and food security analysis

# What Can You Do With The GIEWS Workstation

---

- Get your information organized
- Get best available Food Security data from different sources
- Perform data analysis in a simple way
- Easily share information with internal/external users
- Produce maps, tables, charts and reports

# GLEWS Workstation Analysis



Data sources

# Country-level Approach

---

Open-source  
software (free  
software)

Decentralized  
database

Adoption of  
international  
standards

Efficient  
data sharing  
and security  
system

Training and  
assistance  
packages

1. Involvement of national institutions (participatory approach);
2. Data collection at country level;
3. Decentralized software development;
4. Employment of local expertise;
5. Modular approach for software and data;
6. Strong core development/supporting team in HQs;

# Crop Monitoring

Welcome guest

PROJECT VIEW TOOLS LANGUAGES

MAP TABLE CHART METADATA Change Geographic Area: Eritrea

Select Area:

Log In

## Eritrea

**Layer Selection**

**Level 1 Datasets**

**Legend**

Rasters

- Remote Sensing Products
- SPOT
- MAY 2006 dekad 2

Bare Soil	
37	59
60	74
Sparse Veg	
100	119
Light Veg	
145	169
170	194
Medium Veg	
210	229
229	239
Heavy Veg	
Water/Mask	

MAR 2006 dekad 3 DY

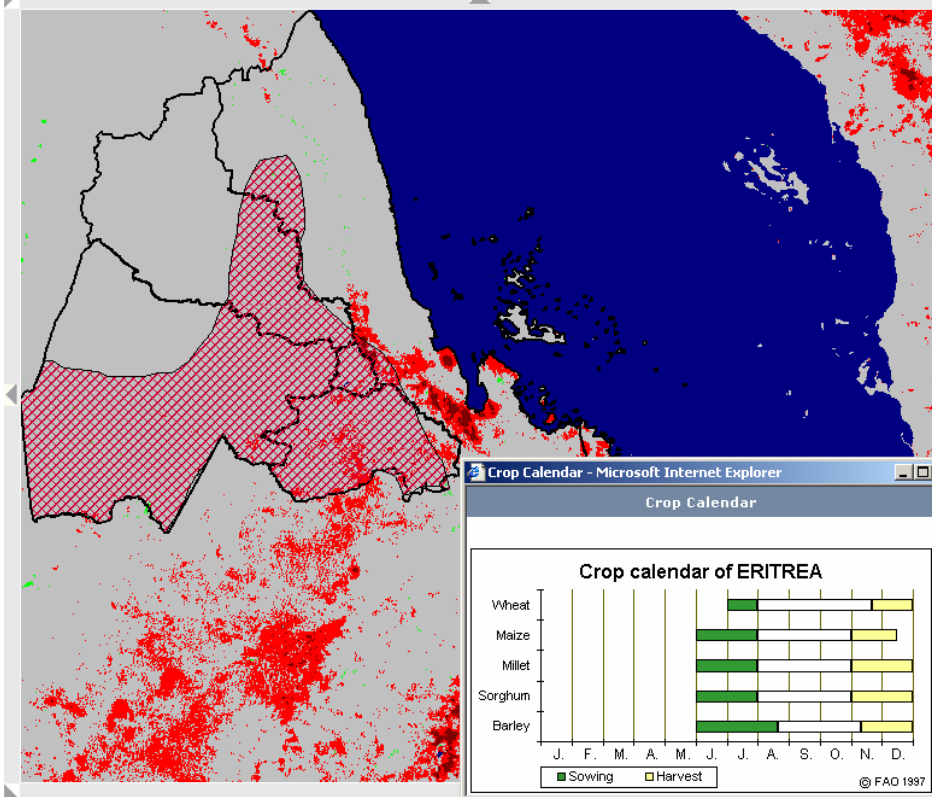
- Large Decrease (> -15%)
- Small Decrease (-15%, -5%)
- No Change (-5%, +5%)
- Small Increase (+5%, +15%)
- Large Increase (> +15%)
- Water

Geographic

Level 1

0 94 km

Show All



**Text**

Reference Date: 10-May-2006

ERITREA (10 May)

The final estimate of the 2005 cereal crop has not yet been made available. However, tentative estimates indicate a crop of about 150 000 tonnes, about 15 percent above the average of the previous five years. Planting of the 2006 long cycle crops will start in the next six to eight weeks. On average, Eritrea produces only a fraction of its total food requirements and largely depends on imports.

**Food Security Status**

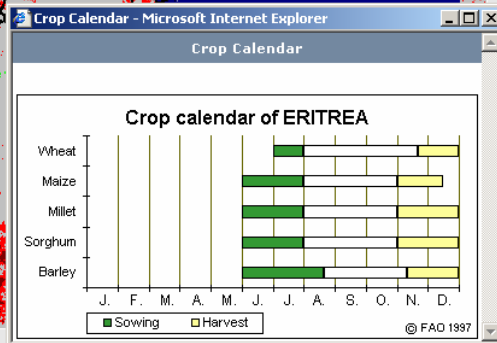
Reference Date: 2006-03-23

**Type of Food Insecurity**

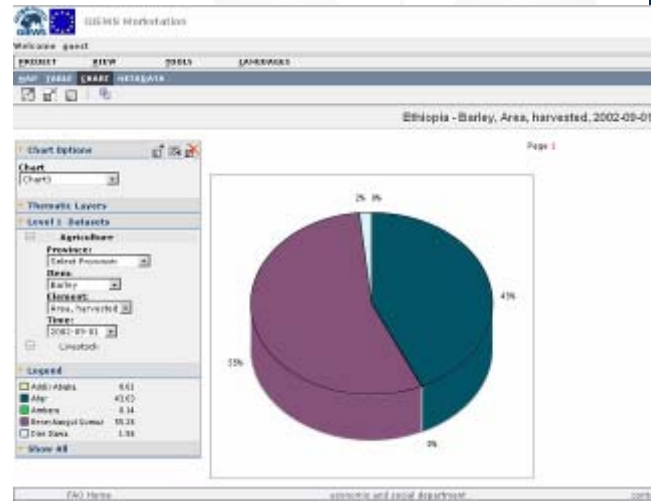
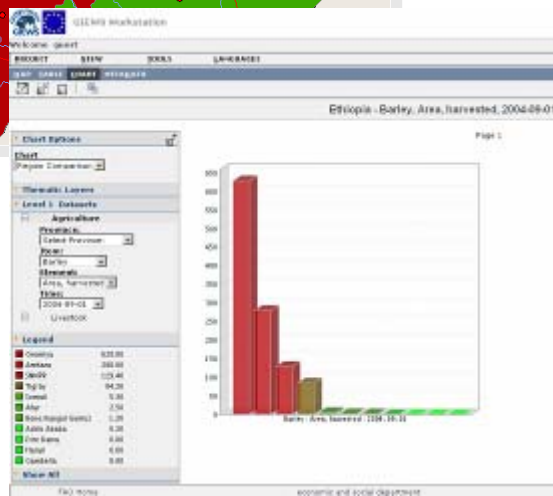
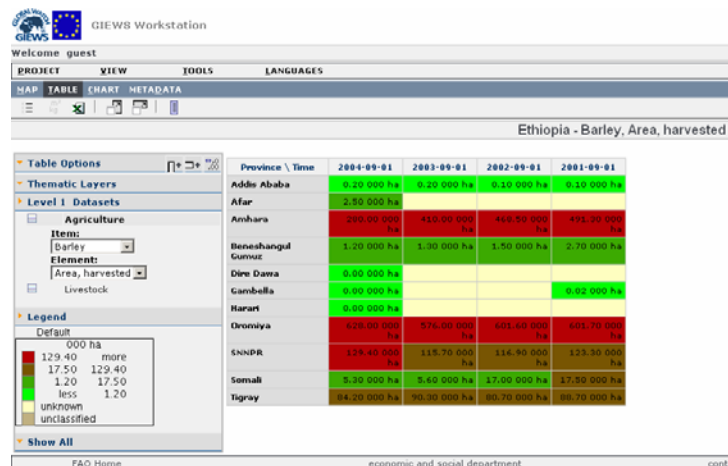
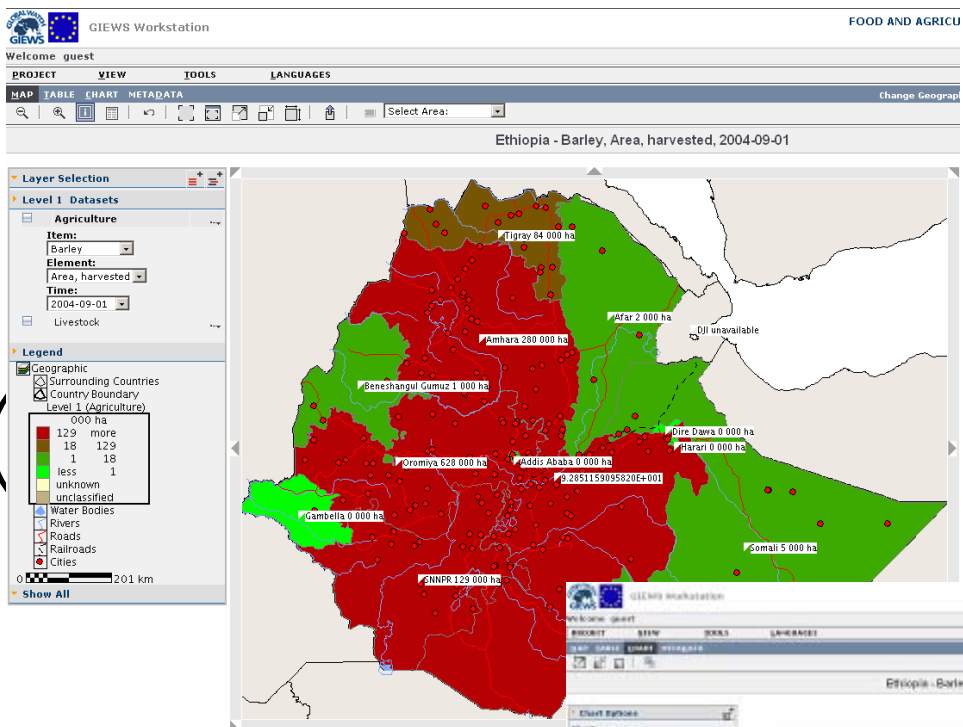
Exceptional shortfall in aggregate food production/supplies

**Main Reasons**

Drought, IDPs, returnees, high food prices



# Analyze Indicators



# Verify and Publish Text

The screenshot displays the GIEWS Workstation interface. At the top, it shows the GIEWS logo and the text 'GIEWS Workstation'. Below this, there are navigation tabs for 'PROJECT', 'VIEW', 'TOOLS', and 'LANGUAGES'. A toolbar contains icons for map navigation and editing, with a 'Select Area:' dropdown menu. The main map area is titled 'Ethiopia - Other cereals, Area, harvested, 2002-09-01'. On the left, a 'Layer Selection' panel shows 'Level 1 Datasets' and a 'Legend' for 'Geographic' data, including 'Country Boundary' and 'Level 1 (Agriculture)'. A legend for '000 ha' shows color-coded areas: red for '28.50 more', brown for '1.00 28.50', green for '0.30 1.00', and yellow for 'less 0.30'. Other layers include 'Water Bodies', 'Rivers', 'Roads', 'Railroads', and 'Cities'. A scale bar indicates 128 km. On the right, a 'Text' panel shows a 'Reference Date: 06-March-2006' and the title 'ETHIOPIA (28 February)'. The text content describes a joint FAOWFP mission's findings on cereal and pulse production in the 2005 main meher season, noting a 14% increase over the previous year and a 46% increase over the four-year average. It also mentions food insecurity concerns. Below the text, a 'Food Security Status' panel shows a 'Reference Date: 2006-03-24' and 'Type of Food Insecurity' as 'Severe localized food insecurity'. 'Main Reasons' listed include 'IDPs, low incomes, drought in Ogaden region'. At the bottom, there are 'Save', 'Save as draft', and 'Cancel' buttons.



# Main Characteristics

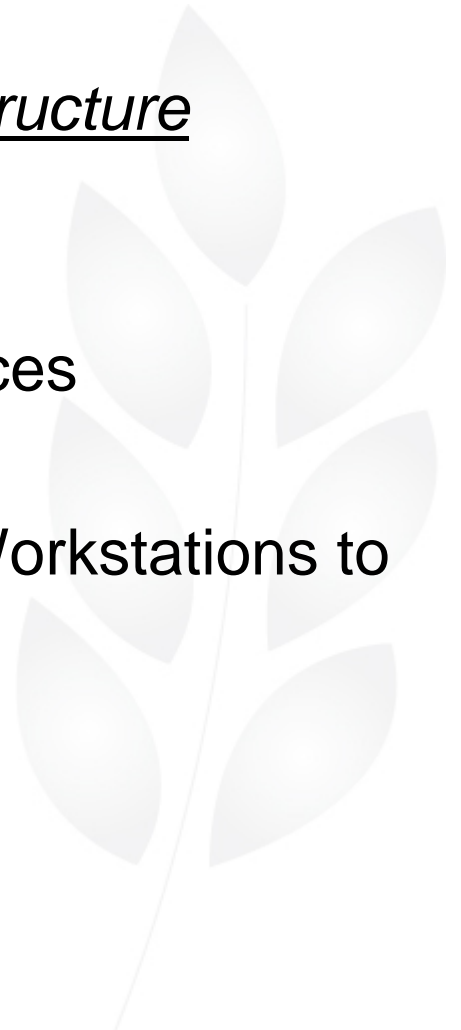
---

- Based on free software (Java, MySQL, Linux); no license constraints for distribution
- Follows a modular approach: allows users to add/remove tools → easily adaptable to country situations
- Decentralized: data is maintained by owner institutions (**distributed system** opposed to **centric system**)
- Equipped with a security system to restrict or give access to data in accordance to national data policy

# Main Components

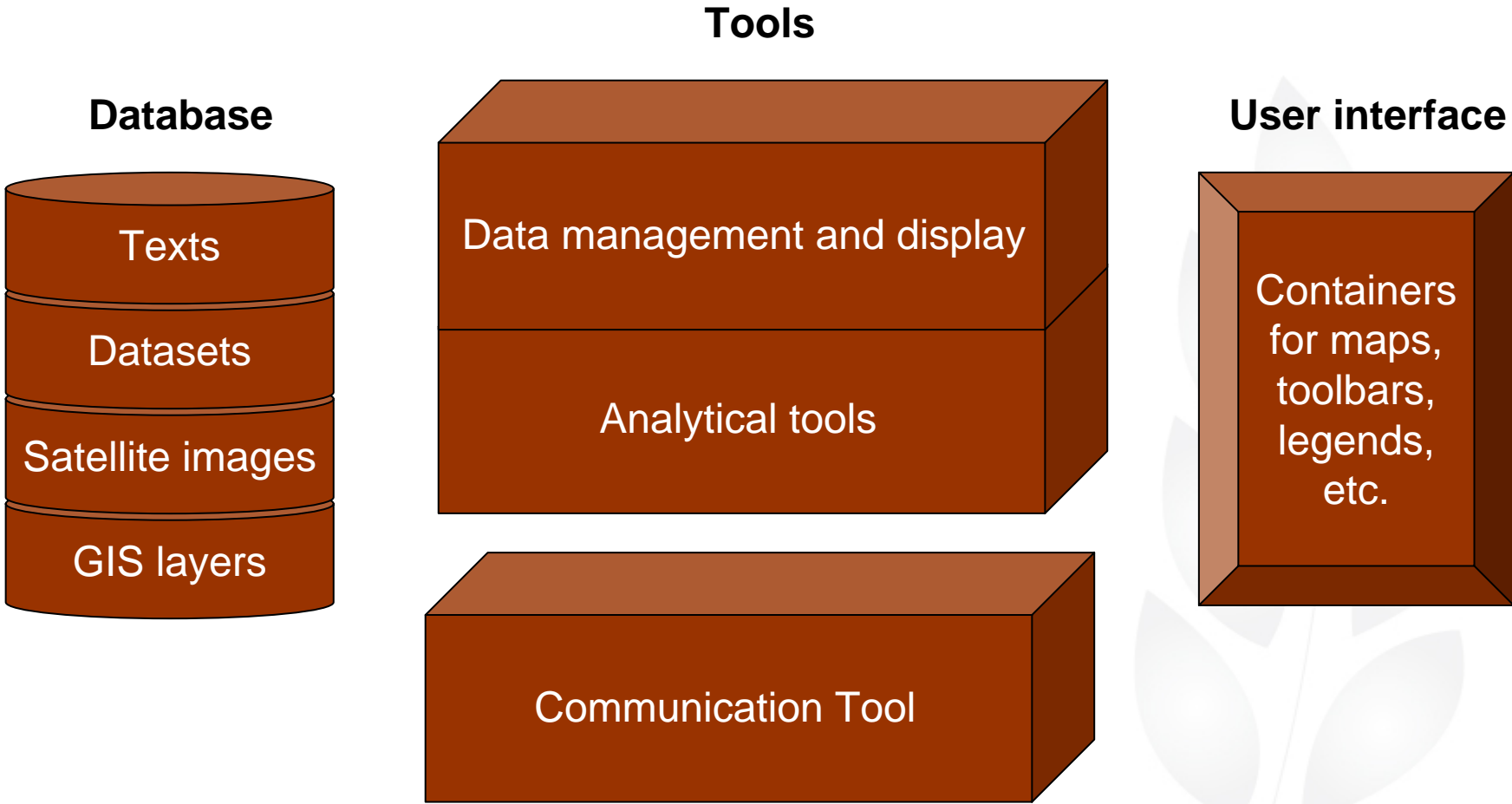
---

- The software application with its tools
- A solid and widely applicable database structure (optimization and standardization)
- Data from international and national sources
- Communication system among GIEWS Workstations to facilitate access to data

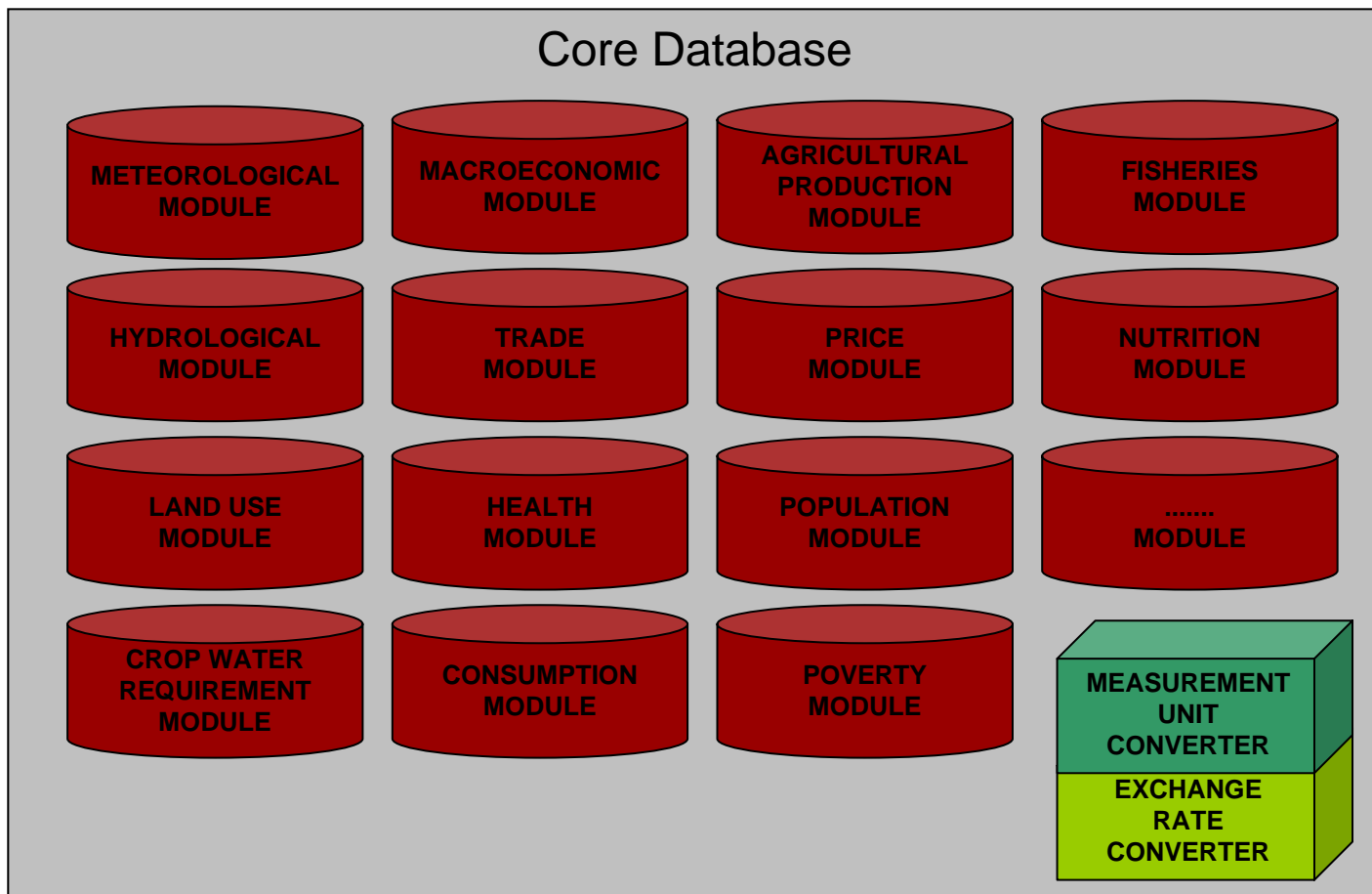


# The Architecture

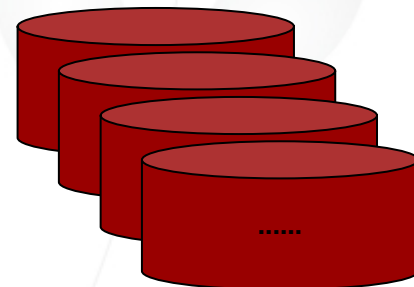
---



# The Database



External Tables



# MySQL Database

The screenshot displays the MySQL Table Editor interface for the 'int\_prc' table in the 'food\_security' database. The table structure is defined as follows:

Column Name	Datatype	NOT NULL	AUTO INC	Flags	Default Value	Comment
int_prc_id	INTEGER	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> UNSIGNED <input type="checkbox"/> ZEROFILL	NULL	
Area_Code	INTEGER	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/> UNSIGNED <input type="checkbox"/> ZEROFILL	0	
hs02_code						
int_prc_type_code						
Value						
cry_code						
mu_code						
Date						
ped_type_code						
data_provider_code						
data_adm_code						
acs_type_code						

The Query Browser shows the following SQL query and its result set:

```
SELECT * FROM int_prc i;
```

int_prc_id	Area_Code	hs02_code	int_prc_type_code	Value	cry_code	mu_code	Date	ped_type_code	data_provider_code	data_adm_code	acs_type_code
1	0	0207	51	1,885.00	USD	51	1993-04-01	2	12	2	2
2	0	0207	51	1,862.00	USD	51	1993-03-01	2	12	2	2
3	0	0207	51	1,860.00	USD	51	1993-02-01	2	12	2	2
4	0	0207	51	1,896.00	USD	51	1993-01-01	2	12	2	2
5	0	0207	51	1,933.00	USD	51	1992-12-01	2	12	2	2
6	0	0207	51	1,897.00	USD	51	1992-11-01	2	12	2	2
7	0	0207	51	1,999.00	USD	51	1992-10-01	2	12	2	2
8	0	0207	51	2,119.00	USD	51	1992-09-01	2	12	2	2
9	0	0207	51	2,217.00	USD	51	1992-08-01	2	12	2	2
10	0	0207	51	2,268.00	USD	51	1992-07-01	2	12	2	2
11	0	0207	51	2,311.00	USD	51	1992-06-01	2	12	2	2
12	0	0207	51	2,351.00	USD	51	1992-05-01	2	12	2	2
13	0	0207	51	2,381.00	USD	51	1992-04-01	2	12	2	2
14	0	0207	51	2,381.00	USD	51	1992-03-01	2	12	2	2
15	0	0207	51	2,384.00	USD	51	1992-02-01	2	12	2	2
16	0	0207	51	2,470.00	USD	51	1992-01-01	2	12	2	2
17	0	0207	51	2,506.00	USD	51	1991-12-01	2	12	2	2
18	0	0207	51	2,437.00	USD	51	1991-11-01	2	12	2	2
19	0	0207	51	2,448.00	USD	51	1991-10-01	2	12	2	2

The interface also shows a schema tree on the right, a list of functions, and a status bar indicating 29984 rows fetched in 1.0872s (0.0198s).

# Standardization

---

- Harmonized Commodity System (HS) from World Custom Organization (WCO)
- Global Administrative Unit Layers (GAUL) from FAO
- ISO 19115 for Metadata
- Metadata exchange standard for non-spatial data (to be implemented: SDMX, DDI, Dublin Core)





Welcome Fabio Grita Log Out

Type project name (e.g. country/region):  Select project: World

PROJECT VIEW TOOLS LANGUAGES HELP

MAP TABLE CHART METADATA GIEWSNETWORK ADMINISTRATION

World

**Layer Selection**

- Weather JRC (1/2 degree)
- Geographic
- Countries
- Level 1

**Countries Datasets**

- World - Food Security I...

Hide All

**Layer Metadata: Countries**

**::Identification info**

No preview available

**Title** GAUL Country Boundaries  
**Date** 2007-07-19 (publication)  
**Organisation name** FAO  
**Electronic mail address** GIEWS1@fao.org  
**Role** Custodian  
**Language** en  
**Abstract** GAUL Level 0 - Country boundaries  
**Topic category** Boundaries  
**Descriptive keywords** Country boundaries, GAUL.

**::Equivalent scale**

Powered by GeoNetwork

**Dataset Metadata: World - Food Security Indicators**

**::Identification info**

No preview available

**Title** GIEWS Food Security Indicators  
**Date** 2007-07-16 (publication)  
**Electronic mail address** GIEWS1@fao.org  
**Role** Originator  
**Language** en  
**Abstract** Describe food security status at country level  
**Topic category** Society  
**Descriptive keywords** Food Security, .

**::Equivalent scale**

**::Geographic box**

Powered by GeoNetwork

# Communication Module

---

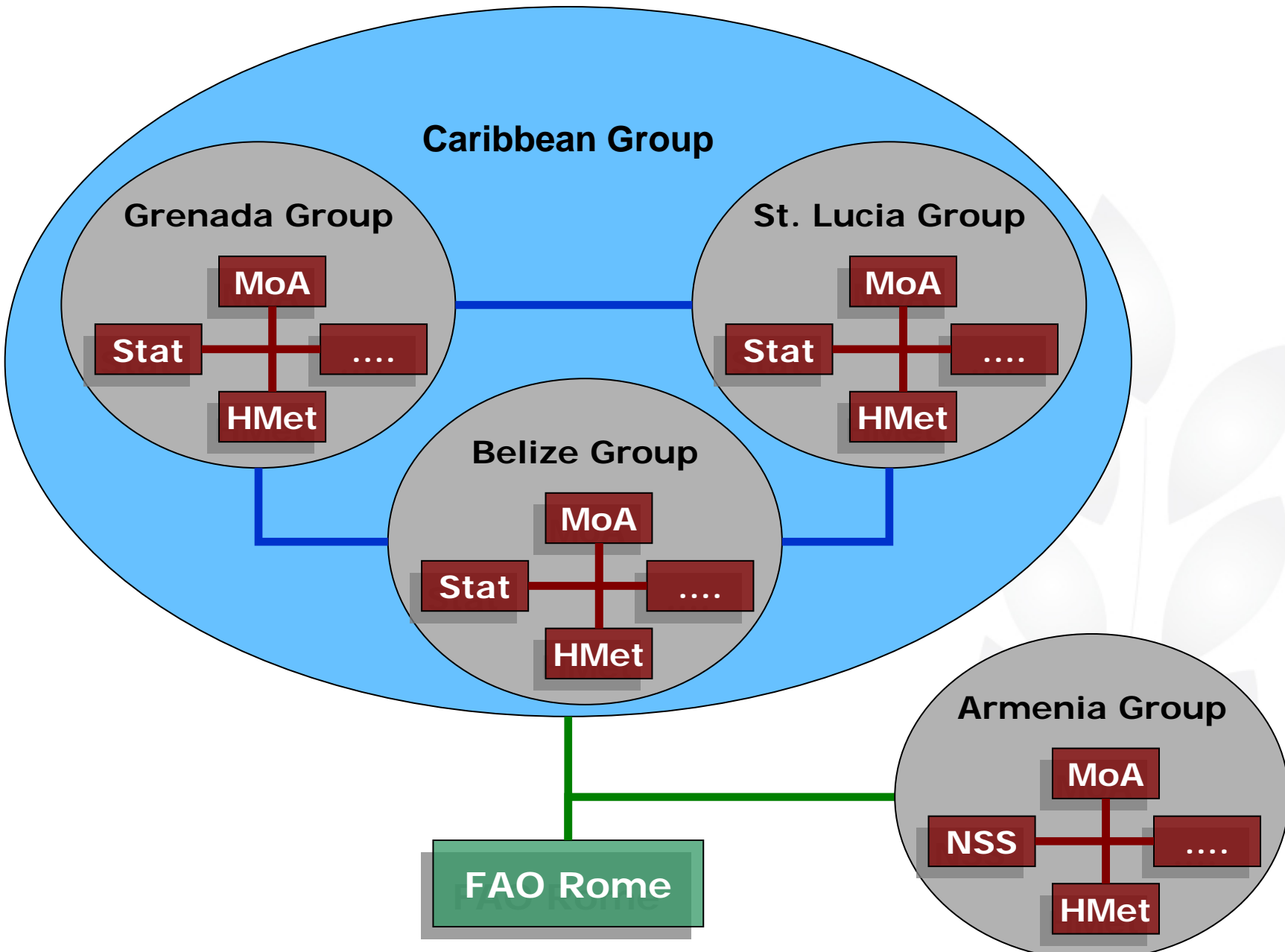
- Allows several GIEWS Workstations to efficiently communicate
- Workstations are arranged in groups:
  - Each group defines **data to be shared and types of users** having access to this data (set of privileges)
- Allows users to visualize and access currently active Groups and Workstations
- Enables sharing and downloading data
- Monitors download processes
- Imports downloaded data

# Communication Module - Features

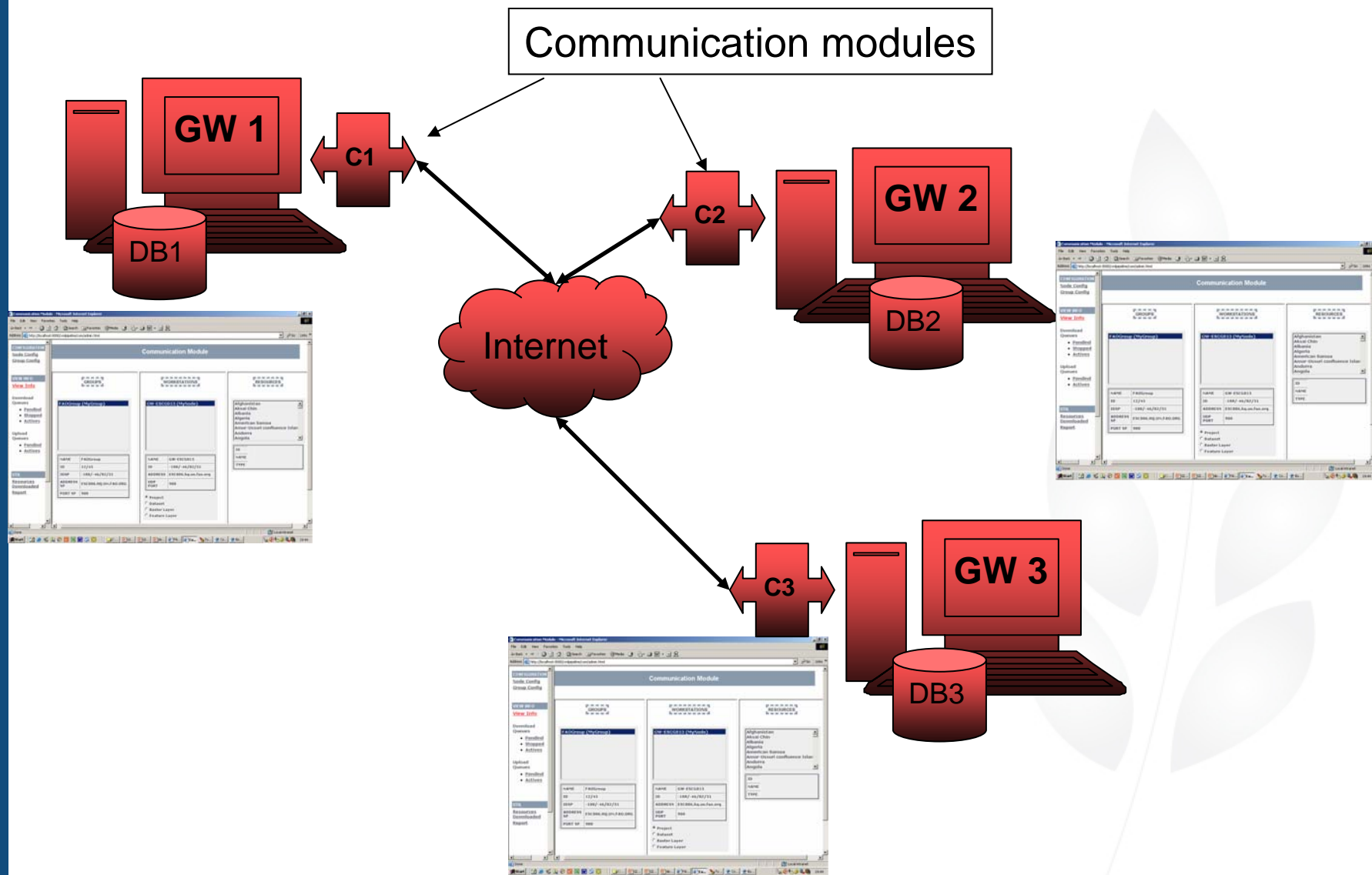
---

- Data Exchange Security System (Authentications and Encryption)
- Standard format and structure of the GIEWS Workstation Database
- Search engine that uses metadata information to find resources (data, layers, news) across the network (under implementation)

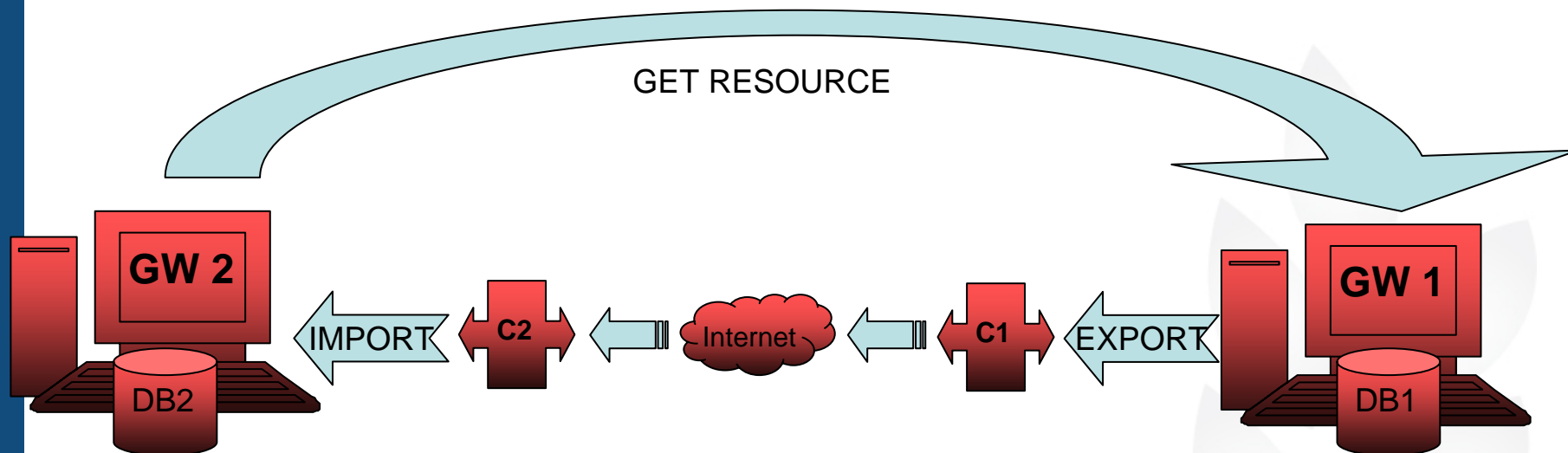
# GIEWS Workstation Network



# Communication Module



# Data Download



- Data is efficiently transferred among two Workstations
- Type of resources:
  - Projects (Maps, Layers and Datasets)
  - Layers
  - Datasets

# Under Development

Development of the GIEWS Workstation as a collection of tools made available through **macro-applications**

A **macro-application** is a specialized view of the GIEWS Workstation optimized for a specific use

A **macro-application** includes only those tools relevant for that specific use

The **new architecture** is the basis for future development of the GIEWS Workstation as an **open-source** application

## GIEWS Workstation

Data Analysis and Display

Maps  
Chart  
Tables  
Text

Data Management

Layer management  
Tables update  
Chart

FS and Humanitarian Response (IPC)

Maps  
Chart  
Tables  
Forum

Natural Disaster Management

Maps  
Chart  
Text  
Weather Satellite Systems



---

**Thank you for your attention**

