

## STATISTICS IN FAO

### INTRODUCTION

While the FAO Statistics Division (ESS) (part of the FAO's Economic and Social Development Department) is the central custodian of agricultural statistics in the Organization (with most of the basic information and economic variables), statistics can be found throughout a knowledge organization such as FAO. Over the past half century, the Division's mandate has grown over the years from originally covering key variables of global agriculture- agricultural production, trade with special emphasis on hunger- to today where a whole set of sourced economic data are collected and maintained.. This mandate encompasses a very wide range of data and other related activities: *The Statistics Division assembles, analyses and disseminates statistical data on world food and agriculture; cooperates with member countries in improving the coverage, consistency and quality of the data; provides advice and assistance to Member Governments to develop & improve food & agricultural statistics; and also provides technical supervision to the statisticians in the regional and sub-regional offices.*

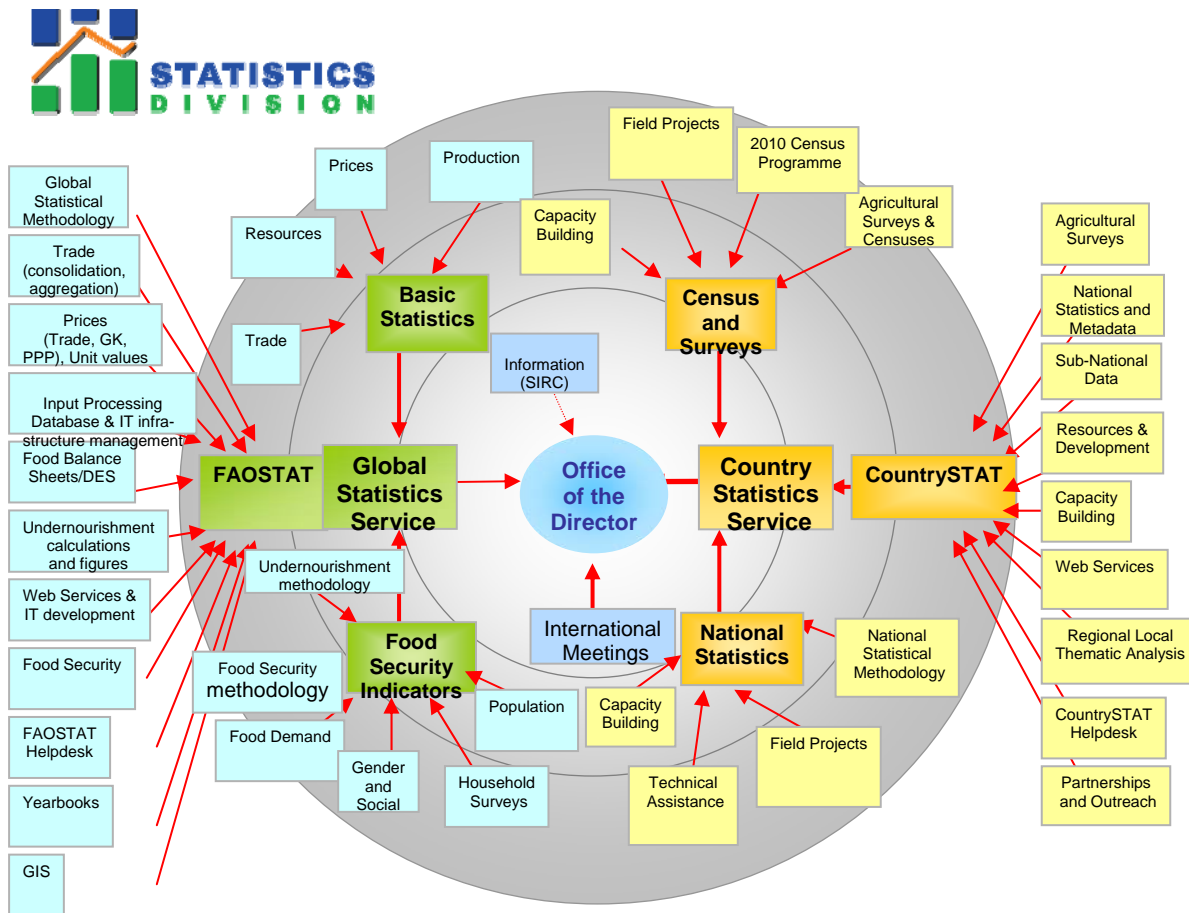
Organization wide, statistics coordination is carried out by an Inter-Departmental Working Group (IDWG) on Statistics, chaired by The Statistics Division. The IDWG has representatives from all FAO Divisions involved in the preparation of statistics and it reports back to the Office of The Director General.

Most importantly, and mission critical, the Statistics Division is responsible for The FAO Corporate Statistical Database, FAOSTAT, and staff are compiling, processing and storing time series statistical information from 1961, by country. FAOSTAT is multilingual (Arabic, Chinese, English, French, Spanish, Russian) currently containing over 3 million time-series records from over 210 countries and territories covering domains on agriculture (production, consumption, trade, prices and resources), nutrition, fisheries, forestry, food aid, land use and population. It is currently the world's largest and most comprehensive statistical database on food and agriculture. It contains over 1 billion data points (cells), 40 million of which are updated annually. FAOSTAT consists of an integrated **core** database and satellite databases feeding and supporting it. Therefore it's appropriate to talk about the FAOSTAT family which is organised in modules around a *core* database that brings together and integrates the data contained in thematic databases.

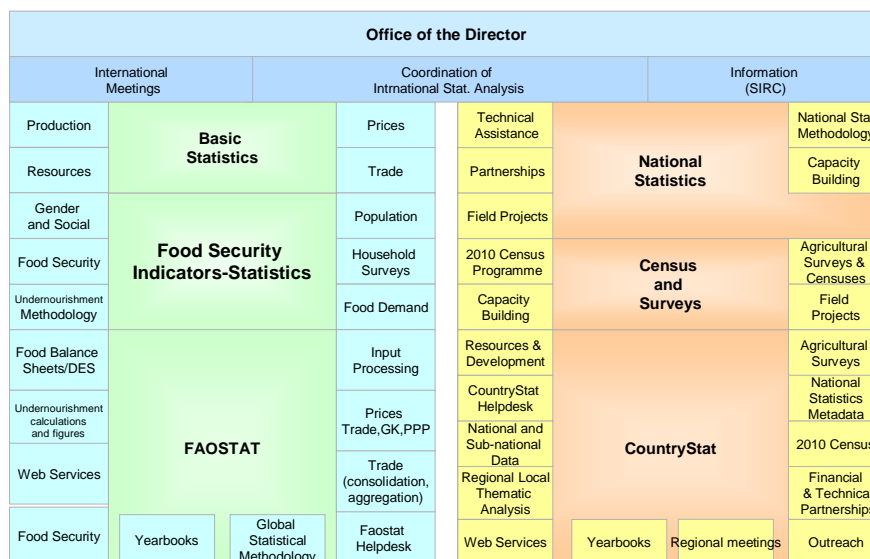
The site receives more than 3000 individual unique visits per day and 50 million records are downloaded daily. In fact, it represents more than a quarter of the visits to FAO's site each day and most of the FAO bandwidth. This is a hundred fold increase just over the last 5 years.

### THE STATISTICS DIVISION

To carry out its functional role the Division is divided into two Services – *Global Statistical Service* and *Country Statistical Service* each entrusted to manage two key data tools; viz., FAOSTAT and CountrySTAT. The diagram 1 below indicates the Services and some of the roles played by each.



**Diagram 1**



**Diagram 2**

As the lead “data assembly role” in the Division is undertaken by **The Global Statistics Service (ESSG)** while the key development function is managed by **the Country Statistics Service (ESSS)**. Diagram 2 captures the key activities of the Division: within ESSG –crop and livestock statistics and other statistics (basic *statistics*), food security statistics and FAOSTAT; and in ESSS- national statistics support including project work, and CountrySTAT as well as Census and Survey advocacy. CountrySTAT is an integrated national food and agriculture statistical information system and software ensuring harmonization of national data and metadata collections for analysis and policy making.

The Information and data which is compiled is disseminated not just through FAOSTAT but through the FAO Statistical Yearbook, as well as through important publication such as the State of Food Insecurity (SOFI). The latter covers FAO’s critical annual assessment of food deprivation. Census summary reports are also issued by The Division as well as methodological contributions through the Statistical Development series of publications.

## RECENT METHODOLOGY DEVELOPMENT WITHIN THE STATISTICS DIVISION

Over the past four years methodological developmental work has been concentrated on three areas a) Completely reworking and redesigning FAOSTAT, b) CountrySTAT c) Continuous development of a programme for decennial World Agricultural Census Programme and d) a new FAO Statistical Yearbook format and coverage. The old FAO Production Yearbook, FAO Trade Yearbook and FAO Fertilizer Yearbook were dropped for the new single FAO Statistical Yearbook. The redevelopment of FAOSTAT under *the FAOSTAT2 project* meant resigning the data (and commodity) coverage, statistical questionnaires, hardware changes, as well as software reengineering. It meant the development of the core data set where major variables, by year, can be mixed and matched; this was a central component of the methodological revision. As well, the web design of FAOSTAT was completely altered along with the site management reverting to the Statistics Division. Trade matrixes were given a new prominent role in the new database and dynamic trade flows for countries of origin and

destination developed. In addition, the conversion of trade to primary equivalent in the Core was a completely new presentation. So the method of conversion then of food to their primary equivalent in calories was completely revised adopted a direct calorie conversion approach. Lastly, the estimation of crop production and other related data using a maximum entropy approach within the framework of a supply utilization framework was a fundamental change from the past manual working through national crop and livestock supply utilization accounts. Old geographic and commodity aggregates were dropped as the Division took on a re-examination of them. Work is continuing in this area and new aggregates are being rolled out. The outcome of revising FAOSTAT's underlining methodology and dissemination format far surpassed the original project design. The ambitious undertaking lead to developments in meta data as well as completely new data entry and processing programmes on the backend of FAOSTAT. CountrySTAT work too was a major component of new FAOSTAT.

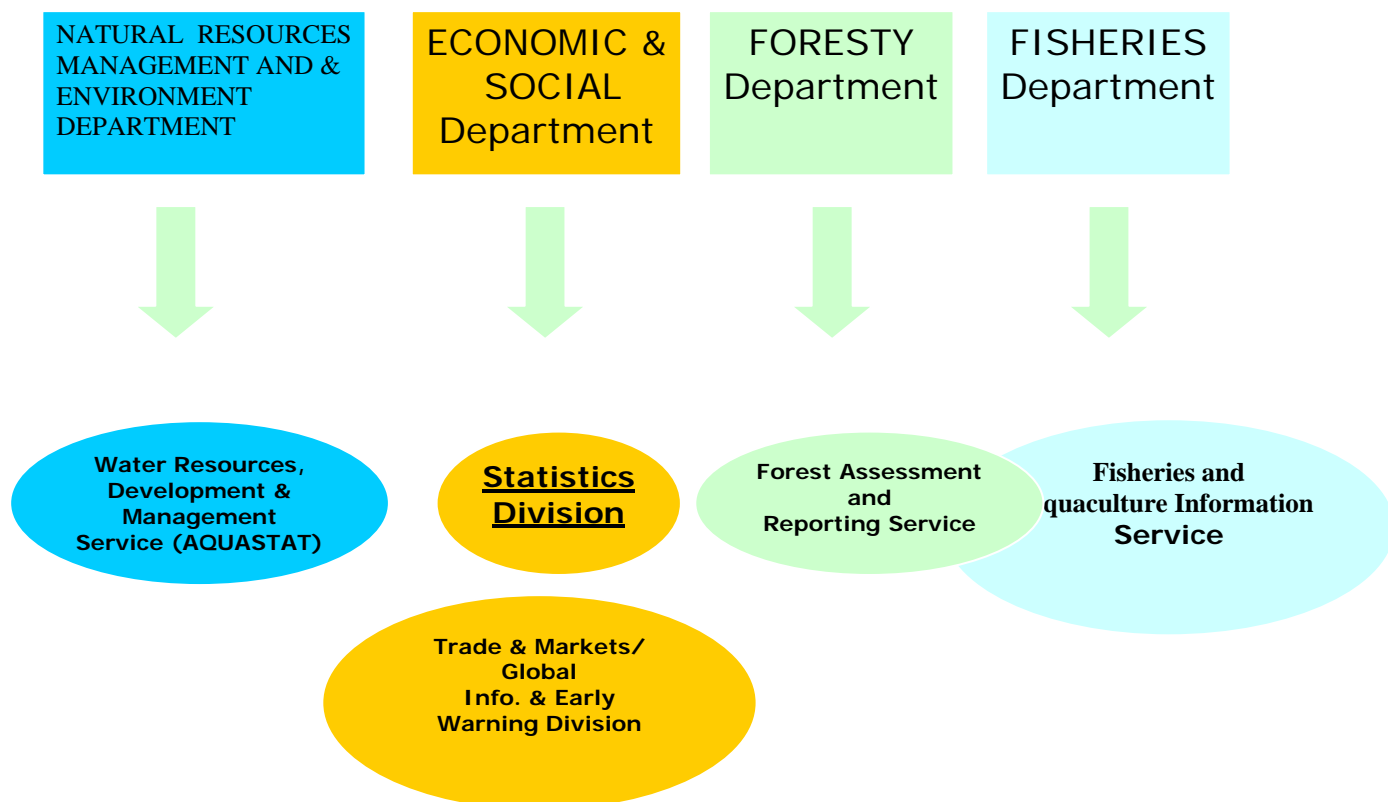
CountrySTAT is a statistical framework and applied system for organizing, integrating and disseminating statistical data and metadata on food and agriculture. CountrySTAT gathers and harmonizes scattered institutional statistical information so that information tables become compatible with each other at the country level and with data at the international level. From the technical point of view, the approach is based on the application of data and metadata standards of *FAOSTAT2* and SDMX (Statistical Data and Metadata Exchange promoted by IMF, WB, UNSD, EUROSTAT, FAO) which are integrated into CountrySTAT by definition. The main expected result is to facilitate decision-makers access to information and to bind data sources that are currently spread throughout different institutions. A capacity building strategy to make the system sustainable in the long term has been implementing.

The objective of CountrySTAT is to build nationally owned statistical information system for food and agriculture which harmonize and integrate statistical data on food and agriculture coming from different sources. policy makers and researchers can easily analyze statistical data across thematic areas – such as production, trade and consumption – with the time to elaborate and monitor strategies for reducing food insecurity and extreme poverty. CountrySTAT provides statistical standards, harmonized data and metadata and their exchange tools with the related methods. The main objective is to build nationally owned capacity for each country which includes coordination, harmonization and enhanced value to statistical information on food and agriculture.

Furthermore, statistical collections were revitalized in the area of price statistics, inputs (machinery), fertilizer and pesticides with greater use being made of COMTRADE data to populate some of these data sets. Work continued to be expanded in the area of external trade statistics with even expanded collaboration amongst OECD, UNSD and FAO.

#### SOME KEY CONTRIBUTORS:

While ESS is has this lead role as the main collector and repository, as note at the outset, it is not alone in collecting and disseminating agricultural data. In fact, FAOSTAT itself, as a Corporate Database, contains data contributed by two other key departments: Fishery Department and Forestry Department; viz and in particular Fisheries and Aquaculture Information and Statistics Division and Forest Assessment and Reporting Service. In this regard, statistics in FAO can be looked at coming from all four locations.



## NATURAL RESOURCES MANAGEMENT AND ENVIRONMENT DEPARTMENT

*AQUASTAT* (managed by the Water Development and Management Unit) is FAO's global information system on water and agriculture. It collects, analyses and disseminates data and information by country and by region. Its aim is to provide users interested in global, regional and national analyses with comprehensive information related to water resources and agricultural water management across the world, with emphasis on countries in Africa, Asia, Latin America and the Caribbean. The main country database covers data by country on:

- Land use and population (from FAOSTAT)
- Climate and water resources
- Water use, by sector and by source
- Wastewater and desalinated water (non-conventional sources of water)
- Irrigation and drainage
- Environment and health

In addition to the main country database, there are also other databases, such as:

- a detailed geo-referenced database on African dams
- a database on investment cost in irrigation
- a database on river sediment yields
- a database on country institutions related to water and agriculture

Major relevant publications:

All publications on "Irrigation in [name of region] in figures", which are part of the NRLW Water Reports (WR) publication series, such as "Irrigation in Africa in figures" (WR 7 and WR 29), "Irrigation in the Near East region in figures" (WR 9), "Irrigation in the countries of the Former Soviet Union in figures" (WR 15), "Irrigation in Asia in figures" (WR 18), "Irrigation in Latin America and the Caribbean in figures" (WR 20).

Review of world water resources by country (WR 23).

Global map of irrigation areas (contains maps plus reports with data by country at sub-national level) (CD 34 of Land and Water Digital Media Series).

Irrigation potential in Africa (Land and Water Bulletin 4).

The Agriculture and Water chapters of the World Water Development Report (WWDR) series

## TRADE AND MARKETS DIVISION

A major contributor to the information are the various commodities specialist in the Trade and Markets Division, (our sister Division in the Department) as well as their databases. Considerable commodity knowledge is found in the Division and its information is a key pillar of FAOSTAT data; particular use is made of Food Aid data. In particular, this Division carries out a wide range of statistical functions in their efforts and getting out economic intelligence on the world status of agriculture. Among the commodities monitored are :Wheat & Coarse Grains, Rice, Roots & Tubers, Pulses, Sugar, Oil crops, Meat ,Dairy Bananas ,Tropical Fruits ,Citrus Fruit Fruits, and Vegetable, Coffee and Cocoa, Tea, Cotton Jute and Hard Fibres Hides, Skins Rubber and Other. Their flagship publication is the Commodity Market. Within this division a key Service is GIEWS.

GIEWS The acronym stands for the Global Information and Early Warning System and the Service monitors food supply and demand based on country reports files with it as well as regular field missions to countries with supply-demand gaps.

Major relevant publications:

Commodity Markets, Crop Prospects and Food Situation, Food Outlook, Sahel Report, FAO/WFP Crop and Food Supply Assessment Mission, Food Crops and Shortages, Africa Report.

## FOREST ASSESSMENT AND REPORTING SERVICE (FOIM) OF THE FORESTRY DEPARTMENT

FOIM collects analyses and disseminates data and information on forest resources, products and institutions by country and by regions on a regular basis and in different formats to satisfy the various users needs.

### **Yearbook of Forest Products**

The data covering production and trade of forest products are collected and disseminated every year since 1947 with the publication Yearbook of Forest Products and on WWW through FAOSTAT/forestat (from 1961 onwards). The primarily wood products such as timber, woodfuel, sawnwood, wood panels, pulp and paper and recovered paper and as well as secondary wood and paper products are collected by country through a Joint Forest Sector Questionnaire by FAO in partnership with the International Tropical Timber Organization, UN Economic Commission for Europe and EUROSTAT.

### **Forest Resources Assessment**

The global Forest Resources Assessment (FRA) is the most comprehensive assessment of the status of forest and its changes over time carried out at 5 to 10 years interval since 1946. Just recently it was decided to carry out the FRA every 5 years (1980, 1990, 2000, 2005 with the next one due in 2010). FRA 2005 examines the current status, areas changes, condition, uses and values of forests and other wooded land, with the aim of assessing all services from forest

resources. The results are presented according to six thematic elements of sustainable forest management supported with statistical tables.

### **Surveys**

Two surveys are conducted regularly: The Pulp and Paper Capacity Survey (annually) and the Recovered Paper Survey (every 3 years). They are based on figures received from correspondents worldwide and they are published and posted on WWW.

Major relevant publication:

#### **Annual:**

Yearbook of Forest Products

Pulp and Paper Capacity Survey

#### **Every 3 years**

Recovered Paper Survey

#### **Every 5 years**

The Global Forest Resources Assessment

Trends in Wood Products

### **FISHERY AND AQUACULTURE DEPARTMENT**

#### **(FISHERY AND AQUACULTURE INFORMATION AND STATISTICS SERVICE)**

Fisheries and Aquaculture Information and Statistics Service (FIES) of FAO Fishery and Aquaculture Department (FI) has compiled various data and information required for monitoring, researches and managements of global fisheries and aquaculture. The statistics that the FIES regularly collects, compiles and disseminates include:

- Global Total Fishery Production (quantity by countries, areas and species)
- Global Capture Production (quantity by countries, areas and species)
- Global Aquaculture Production (quantity and value by countries, areas, species and environments)
- Fishery Commodities and Trade (quantity and value by countries, areas, commodities and commodities flow)
- World Apparent Consumption of Fish and Fishery Products (Food Balance Sheets by countries)
- Number of Fishers and fish farmers, and
- Global Fishing Fleet
  
- Global Tuna Nominal Catches (nominal catches of principle market tunas by fishing gear, species, stock, fishing country)
- Atlas of Tuna and Billfish Catches (global distribution of tuna and tuna-like species catches at 5° latitude by 5° longitude resolution)

All of those information are available to the public for free of charge, either through on-line query panel or by downloading data with a software called “FishStat plus” from FI web-site. Data of World Apparent Consumption are also incorporated into the core FAOSTAT data base. It should be noted that the food balance sheets for fish and fishery has been prepared independently and does not utilize the procedure developed recently in the FAOSTAT due to the specific complexity unique to fishery commodity distribution and utilization.

FI web-site also offers glossary, guidelines, standards, and tools relevant to fisheries and aquaculture statistics which include:

- CWP Handbook of Fishery Statistical Standards,
- Fisheries Glossary and Glossary of Aquaculture,
- Reference Tables Management System
- ASFIS Species List,
- Species distribution maps
- FishBase
- Fishery Resource Monitoring System (FIRMS)
- Link to all Regional Fishery Bodies
- Aquatic Sciences and Fisheries Abstract (ASFA)

The Coordinating Working Party on Fishery Statistics (CWP) provides a mechanism to coordinate fishery statistical programmes of regional fishery bodies and other inter-governmental organizations with a remit for fishery statistics, through continuous review of fishery statistics requirement for research, policy-making and management; agreeing on standard concepts, definitions, classifications and methodologies for the collection and collation of fishery statistics; and proposing for the coordination and streamlining of statistical activities among relevant intergovernmental organizations. CWP is a statutory body of FAO with FIES serving as a Secretariat. The membership, currently 16 organizations, covers most of major regional fisheries management bodies and is still growing.

Major relevant publications include:

- Yearbook of Fishery Statistics – capture production
- Yearbook of Fishery Statistics – aquaculture production
- Yearbook of Fishery Statistics – commodities
- The State of World Fisheries and Aquaculture (biannual)

#### Nutrition Factors and Codex:

The Nutrition and Consumer Protection Division (of FAO's Agriculture and Consumer Protection Department Division) are also involved in statistics by preparation and responsibility for food nutrition conversion factors; these parameters are very important for preparation of food balance sheets and monitoring under nourishment at national and global level. The same Division responsible for CODEX ALIMENTARIUS: Pesticide Residues in Food and CODEX ALIMENTARIUS: Veterinary Drug Residues in Food

#### STATISTICAL DATA USE

FAOSTAT data is used internationally for preparing and publishing economic reports and even for meeting criteria for food aid from donors (FAO food consumption data, for example, are set as criteria for qualifying for food aid). At least 20 of its indicators are used in international collections of global economic monitoring and are referred to in leading international journals and business publications.

There are countless FAOSTAT users in FAO itself thus a significant aspect of *Statistics in FAO* is the wide use and repackaging of data intra-FAO. In fact, the use of agricultural and economic statistics permeates all quarters of FAO starting with the Office of The Director General. The Statistics Division data sets are used for all official speeches and reports and such documents are checked by the Division. As well special statistical summaries are prepared for the Director General. Economists throughout the FAO use the data for their economic reports while staff drafting project use the information to compile project documents particularly in completing the "background" section of project documents. One

important input of the data is fore, *World agriculture: towards 2030/2050*. In this case, the whole data set is taken up and used as model input.

The Animal Production and Health Division, as well, use FAOSTAT data in their livestock (GLIPHA) database. The Nutrition and Consumer Protection Division as well are big users of the data sets especially food consumption and intake data. Trade and Markets Division, who also generate and provide data, uses (the FAOSTAT database) data as baseline data for projections and current market analysis. In this case, across the House, data provides are as well data users.

# APPENDIX 1 FAOSTAT DATA CONTRIBUTORS

<b>Land Use</b>	Annual data on land use, by country.	<b>ESSG</b>
<b>Land Use - Irrigation</b>	Annual data on irrigation, by country.	<b>ESSG</b>
<b>Agricultural Machinery</b>	Annual data on usage and trade of agricultural machinery, by country.	<b>ESSG</b>
<b>Fertilizer Data</b>	Annual data on fertilizer production, consumption, trade and prices, by type of fertilizer and year.	<b>ESSG</b>
<b>Pesticide Data</b>	Annual data on pesticide consumption and trade, by country.	<b>ESSG</b>
<b>Producer Prices - Local Currency</b>	Annual average agricultural producer prices for primary crops and livestock products, by country.	<b>ESSG</b>
<b>Annual Population</b>	Annual population data, by country, by gender and other demographic characteristics (urban, rural, etc.)	<b>ESSG</b>
<b>5 Year Long-Term Demographic Projections</b>	Five year long-term demographic projections	<b>ESSG</b>
<b>10 Year Long- Term Demographic Projections</b>	Ten year long-term demographic projections	<b>ESSG</b>
<b>Fertilizer Use by Crop</b>	Quantity of nitrogen, phosphate, and potash applied to major crops, by country.	<b>ESSG</b>
<b>Producer Prices - US Dollars</b>	Annual average agricultural producer prices in current US Dollars for primary crops and livestock products, by country.	<b>ESSG</b>
<b>Index of Agricultural Producer Prices</b>	Annual index of agricultural producer prices for primary crops and livestock products, by country.	<b>ESSG</b>
<b>Capital Stock and Investment in Agriculture</b>	Annual total value of fixed assets owned and used for agricultural production, by country.	<b>ESSG</b>
<b>External Assistance to Agriculture</b>	Annual amount of official development assistance that is given for the development of the agriculture sector.	<b>ESSG</b>
<b>Trade Index Numbers</b>	Trade indices for aggregate agricultural and food products, by country.	<b>ESSG</b>
<b>Agriculture &amp; Food Trade</b>	Quantity and value of agriculture and food imports and exports, by country (aggregated)	<b>ESSG</b>
<b>Agricultural Production</b>	Annual data on crop and livestock production and processing, by country. Data is presented on a calendar year basis.	<b>ESSG</b>
<b>Agricultural Production Indices</b>	Indices showing the relative level of agricultural production in comparison with the base period.	<b>ESSG</b>
<b>Supply Utilization Accounts</b>	Integration of production and trade data that traces single commodities from production through utilization and final consumption	<b>ESSG</b>
<b>Agriculture &amp; Food Trade By Origin and Destination</b>	Annual data on trade flows between country of origin and recipient country.	<b>ESSG</b>
<b>Food Balance Sheet</b>	For each food item (primary commodity or processed commodity), presents the sources of	<b>ESSG</b>

	supply and its utilization, for the specified year.	
<b>Commodity Balances</b>	Annual balances of food and agricultural commodities, in a standardized form, for elements of domestic supply and utilization, by country.	<b>ESSG</b>
<b>Food Supply</b>	Annual estimates of total and per caput food supplies available for human consumption, by country.	<b>ESSG</b>
<b>Oilseeds, Oils, Fats, Cakes and Meals</b>	Production, trade and stocks of oil-bearing crops, and their products, by marketing year and country.	<b>ESTM</b>
<b>Exports of Cereals by Source and Destination</b>	Exports of cereals by exporting and recipient country, by marketing year.	<b>ESTM</b>
<b>Food Aid Data</b>	Food aid shipments for cereal and non-cereal commodities, by recipient and donor country.	<b>ESTM</b>
<b>Food Aid Data - Detailed</b>	Food aid transactions for cereal and non-cereal commodities, by recipient and donor country.	<b>ESTM</b>
<b>Roots and Tubers Commodity Balances</b>	Production, trade and stocks of roots and tubers by calendar year and country.	<b>ESTM</b>
<b>Meat and Livestock Commodity Balances</b>	Production, trade, stocks and inventories of meat and livestock by calendar year and country.	<b>ESTM</b>
<b>Pulses Commodity Balances</b>	Production, trade and stocks of pulses by calendar year and country.	<b>ESTM</b>
<b>Dairy Commodity Balances</b>	Production, trade and stocks of milk, and its products, by calendar year and country.	<b>ESTM</b>
<b>Cereal Commodity Balances</b>	Production, trade and stocks, and inventories of major cereal commodities by marketing year and country, plus July/June year for grains trade data and calendar year for rice trade data.	<b>ESTM</b>
<b>Raw Materials</b>	Production, trade and stocks of raw materials, by trade year.	<b>ESTM</b>
<b>Beverages</b>	Production, trade and stocks of beverages, by trade year.	<b>ESTM</b>
<b>Food Composition</b>	Data on the nutrient content and energy value of food products	<b>AGNA</b>
<b>Codex Alimentarius: Pesticide Residues in Foods</b>	Maximum residue limits for pesticides in food	<b>AGNS</b>
<b>Codex Alimentarius: Veterinary Drug Residues in Foods</b>	Maximum residue limits for veterinary drugs in food	<b>AGNS</b>
<b>Food Additives</b>		<b>AGNS</b>
<b>Fishery Data - Global Production and Trade</b>	Annual production and trade of fishery commodities, by country.	<b>FIES</b>
<b>Fish Production - Catch for Production</b>	Volume of fish catches landed by country or territory of capture, by species or higher taxonomic level, by FAO major fishing area and year.	<b>FIES</b>

<b>Fish Production - Aquaculture</b>	Production quantity and price per kilogram by species, country and aquatic culture environment.	<b>FIES</b>
<b>Fishery Fleet</b>	Number, total tonnage and total power of fishing vessels utilized in commercial, subsistence and artisanal fisheries.	<b>FIES</b>
<b>Fishers</b>	Number of people employed annually in commercial and subsistence fishing, by country.	<b>FIES</b>
<b>Fisheries Supply/Utilization Accounts</b>	Integration of production and trade data that traces fisheries commodities from production through utilisation and final consumption	<b>FIES</b>
<b>Forestry Data</b>	Annual data on production and trade in forestry products	<b>FOIM</b>
<b>Forestry Trade Flow</b>	Annual data on trade flows between reporting country and recipient country, for forestry products.	<b>FOIM</b>
<b>AQUASTAT</b>	Statistics on freshwater availability in agriculture/rural development, by country, with emphasis on irrigation and drainage.	<b>NRLW</b>

ESSG Global Statistics Service; ESTM Trade and Markets Division; AGNA Nutrition and Consumer Protection Division; AGNS Food Quality and Standards Service; FIES Fishery Information, Data and Statistics Unit; FOIM Forestry Industries Monitoring and Assessment; NRLW Water Development and Management Unit.