



**STATISTICAL REFERENCE MANUAL ON DATA
DISSEMINATION USING
THE CountrySTAT SYSTEM
(Revision 3)**

Food and Agriculture of the United Nations

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1 Introduction

Under the supervision of CountrySTAT Management, this manual, prepared by Angela Piersante (Statistician/CountrySTAT-FAO) and Moussa Kaboré (Statistical Expert/UEMOA), is intended for all users who participate and contribute to the publication of statistics on agriculture and food on the CountrySTAT website.

The content summarizes the analysis of all activities of primary data collection through years of experience gained by the Statistics Division of FAO, to make the series comparable and consistent. The definition of data set has been selected primarily for the elaboration of food balance sheets and statistics on food security.

In accordance with international standards of FAOSTAT data are harmonized, standardized and published as a result of the work process that involves the participation of the Technical Working Group in each country. This work is supported by the CountrySTAT team of FAO HQ Rome (Italy) and regional institutions involved (UEMOA HQ Ouagadougou - Burkina Faso, East African Community EAC HQ Arusha – Tanzania, etc.).

The main aims are to obtain statistics on agriculture and food that support effective policy decisions. Specifically, these are:

- Generate statistics that meet international quality criteria (correspondence tables between national and international classifications and metadata) in conjunction with the experience and knowledge of national staff.
- Making data accessible at national, regional and international level.
- Accelerate the process dissemination and publishing data.

The working experience with countries has shown that the major issues that some national statistical structures (in agriculture and food) have to face are due to:

- The data scattering coming from multiple structures responsible for producing statistics;
- The production of the same kind of statistics by different structures;
- The incompleteness of statistics;
- The absence or incompleteness of national classifications;
- The difference between the national classifications and international classifications of products;
- The lack of correspondence between national and international nomenclatures;
- The lack of an organized national level for the validation and harmonization of data;
- The weakness of data organization;
- The lack of management tools and digital archiving of statistical data;

- The weakness of the technical documentation, that has to accompany the production data (metadata);

This paper is a description of the following topics

- i) the general structure of the CountrySTAT site;
- ii) international classifications;
- iii) a proposed approach for creating a commodities classification table and correspondence tables between national and FAOSTAT classification;
- iv) the process of national data collection, harmonization and validation;
- v) presentation of the organization of work structuring, formatting and alignment of data with international standards for data dissemination on CountrySTAT framework;
- vi) presentation of data quality requirements and description of the national institutional framework organization that accompanies the dissemination data process.

The creation of this manual was made possible through the funding of several decades of good practice to collect and consolidate data across national questionnaire FAOSTAT, processing techniques and work organization of the Statistics Division of FAO.

In this regard, we thank:

- FAOSTAT Team and especially those who have participated in the training and the revision of the basic document on the concepts and definitions;
- CountrySTAT Team for their collaboration in assisting countries;
- CountrySTAT Management for their guidance and supervision.

We also thank all the national Coordinators and Experts who participated and contributed through their commitment in all activities to implement and develop CountrySTAT in their own countries.

2 Presentation of CountrySTAT system

The CountrySTAT system is based on decades of FAO experience in the field of agricultural statistics including the development and implementation of the global database on food and agriculture, FAOSTAT. It uses the FENIX platform developed by FAO for the FAOSTAT database.

It is a web-based information system which:

- Enables the organization, harmonization, validation and standardization of data at national and sub-national levels, from multiple sources; integrating them into a common platform
- Places priority on capacity development and country ownership of the system by national institutional frameworks; ensuring results that are sustainable in the long term
- Aims at promoting and reinforcing partnerships among national statistical institutions (i.e. National bureaus of statistics and ministries of agriculture, as well as other concerned institutions)
- Facilitates the exchange of data within a country, among countries and between FAO and countries
- Contributes to the improvement of data quality based on international standards to ensure comparability and easy access
- Simplifies data collection and data dissemination reducing publication time
- Belongs to countries, and is maintained and managed by countries
- Support evidence-based decision-making and facilitate informed policy making at regional, national and sub-national levels.

CountrySTAT is a statistical framework to disseminate agricultural data at National and International level. It is based on FAO data standard structure, concepts and definitions, to make data comparable. To make the system operative, an institutional framework is needed.

2.1 *The institutional framework*

To ensure better implementation and the long-term sustainability of the CountrySTAT system, three country-level bodies are recommended to be in charge of the executive, coordinative and implementation of CountrySTAT:

1. National Secretariat of CountrySTAT (NSC)
2. Technical Working Group of CountrySTAT (TWG)
3. National CountrySTAT Coordination Board

In countries where statistical coordination bodies and mechanisms are in place the creation of new bodies may not be necessary. The functions of the recommended CountrySTAT entities may be done by the existing bodies with due amendment of their terms of reference.

2.1.1 The National Technical Secretariat

In each country, the National Secretariat of CountrySTAT is responsible for the following activities:

- Ensure the implementation of CountrySTAT;
- Provide administrative and financial management of CountrySTAT;
- Execute the recommendations and technical guidance of the National Technical Working Group (TWG) of CountrySTAT;
- Prepare monthly, quarterly and annual reports on the progress of activities and other technical issues to be submitted to the national TWG and the team CountrySTAT FAO HQ;
- Prepare the meetings of the National Coordination and the National TWG, and inform all members of the technical secretariat;
- Prepare the meetings of the National CountrySTAT Coordination Board and the TWG, and ensure their Secretariat;
- Maintain the relationship, at technical level, with the national CountrySTAT at regional and international level;
- Organize the collection of information needed to monitor the food situation and update CountrySTAT, as well as the preparation of food balance sheets.

The selected Focal Institution for the implementation of the CountrySTAT system will be responsible for the National Secretariat of CountrySTAT. The Senior Focal Point will act as CountrySTAT National Coordinator. Each country will decide the composition (at least five staff members) of the National Secretariat of CountrySTAT. However, the National Bureau of Statistics (with at least one statistician) and the national structure in charge of agricultural statistics of the Ministry of Agriculture (with at least one IT and one statistician) should form the backbone of the Secretariat.

The National Secretariat of CountrySTAT can appeal to all relevant departments to carry out the tasks entrusted to CountrySTAT. In terms of technical support, the National Secretariat of CountrySTAT receives guidance of staff and consultants / experts from FAO to facilitate the implementation of activities CountrySTAT.

2.1.2 The Technical Working Group (TWG)

The Technical Working Group has the mandate the following activities:

- Decide on issues of statistical data and metadata quality control, the content published on CountrySTAT, the methodologies and standards, inter-domain collaboration, as well as all technical questions;
- Validate and provide the National Secretariat of CountrySTAT the data and metadata to upload on the CountrySTAT system;
- Ensure coherence and harmonization of data covering different CountrySTAT domains and proceed to necessary decisions;
- Provide the CountrySTAT Secretariat with feedback and recommendations on the exchange, sharing and harmonization of statistical data, as well as operational guidelines;

- Approve the progress reports of CountrySTAT activities to be submitted to the National CountrySTAT Coordination Board (Permanent Secretaries, Directors General, etc.), and for information to the CountrySTAT Team FAO HQ.
- Approve the progress reports of CountrySTAT activities to be submitted to the National Coordination Team and the CountrySTAT FAO HQ.

The minutes of the Technical Working Group of CountrySTAT is prepared by the National Secretariat of CountrySTAT and sent for approval to the National CountrySTAT Coordination Board, and for information to the CountrySTAT Team FAO HQ.

The Technical Working Group of CountrySTAT, technical official body that validates statistical data on food and agriculture, meets in regular technical workshops in accordance with the work plan and many times as necessary in extraordinary session requested by the CountrySTAT National Coordinator. It may involve all relevant departments to carry out the tasks entrusted to CountrySTAT.

The Technical Working Group of CountrySTAT will be composed of the staff members from the main national structures involved in the collection and production of statistical data on food and agriculture.

2.1.3 National CountrySTAT Coordination Board

To ensure ownership and sustainability of the CountrySTAT system, a high level National CountrySTAT Coordination Board is established. It is responsible for the following activities:

- Provide advice and guidance on key decisions and issues related to CountrySTAT;
- Approve the quarterly reports and evaluation of the Technical Working Group of CountrySTAT;
- Make recommendations to the Technical Working Group and the National Secretariat of CountrySTAT;
- Secure the necessary funding to ensure the sustainability of the CountrySTAT system.

The National CountrySTAT Coordination Board may be composed of:

- Senior Staff from key National Institutions for Food and Agricultural Statistics and other Stakeholders (Permanent Secretaries, Directors General, etc..)
- The Focal Institution Director
- FAO Representation in the country
- Representative staff from the Donor / project sponsor
- The CountrySTAT Manager as observer

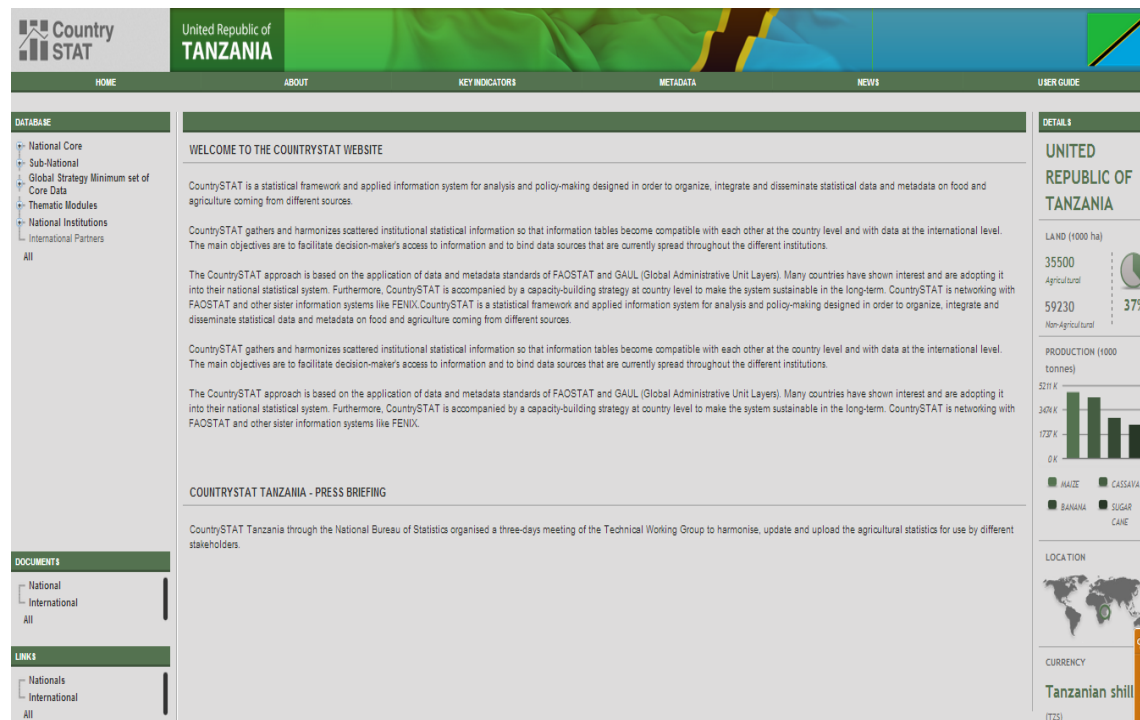
The high level National CountrySTAT Coordination Board meets once a year in regular session and as many times as needed in special session requested by its President. The minutes of the Coordination Board meetings, prepared by the National Coordinator of CountrySTAT, is shared with FAO Headquarters for information.

2.2 The organization of content on the web site

The data includes all major agricultural and food economic activities together in one central data collection coming from various national sources in order to facilitate and speeding up the accessibility with the commitment of ensuring data quality.

CountrySTAT uses the Internet for data dissemination system. The web platform is designed so that the homepage provides immediately an overview of the various components of the system.

The system of data dissemination is via the web and it is organized as follows:



1. The page on the website

Here is a brief description for each theme.

2.3 Home

This page is in correspondence with the CountrySTAT framework.

The page has been designed to accommodate three menus in order to facilitate the user in the research on key topics such as:

- the horizontal menu includes:

- some information about CountrySTAT focal institution and the structure of team that work for CountrySTAT and a list of national institutions involved in CountrySTAT activities.
- a brief section on selected Key Indicators to present the country profile
- a reference statistical metadata section.
- a guide on how to make requests and the conventional symbol explanations adopted by CountrySTAT.
- the left menu includes the national database organized in main domains and sub-domains.
- the right menu shows some information on national CountrySTAT activities, publications and links to other relevant sites. In addition, some information about the latest updated tables.
- The middle part describes the content

In the “Footer” section "FAQ" Frequently Asked Questions, Terms of Use, Privacy Policy, and the link for the administrative management can be found.

2.4 About

This page enables the user to familiarize with the framework structure and it includes:

- 1) A brief description of CountrySTAT objectives and mission
- 2) A brief description of the national institution that received the governmental mandate to publish the official data on food and agriculture
- 3) A presentation of the CountrySTAT national organization
 - Secretariat (names, photos and roles in the Institution)
 - National coordinator (name, photo and role in the Institution)
- 5) A presentation of CountrySTAT national activities.

This topic explains the organization and the structure of the national CountrySTAT system and how to lead activities to achieve the national objectives. For examples the organization of advocacy meetings, videos, interviews, etc., relations with other national institutions and the organization of the work session, etc.

2.5 Key Indicators

This is a general brief profile of the country. The indicators were selected from a document that refers to "the global strategy to improve agricultural and rural statistics". It is based on the contribution of many stakeholders, including national statistical institutes and departments of agriculture together with regional and international organizations.

The compilation of these indicators is the result of an intensive analysis on data

collection, harmonization, validation and standardization, coming from different sources and very often requested by users.

2.6 Metadata

This section provides all supported information concerning indicators that are published on the website. It includes international standards, classifications, concepts and definitions that are adopted by countries to publish data and other information on the methodology and statistical techniques used by the country.

It can be useful not only for statisticians who compile, validate and analyze the data, but also for users who access and use the data.

The metadata system enhances understanding of any given data item within CountrySTAT by managing the documentation of related concepts and definitions, its sources and the methodologies used in its collection.

2.7 CountrySTAT News

This space is dedicated to the main news on food and agriculture. The National Secretariat of CountrySTAT selects relevant information to be disseminated on the CountrySTAT website.

It is also possible to publish brief information on the activities of the implementation of the CountrySTAT system: official ceremony of the launch website CountrySTAT, media products (newsletters, press articles, interviews, reportages, Audiovideo), CountrySTAT YouTube Channel, news on national and regional CountrySTAT training, pertinent publications, etc.

This section should include information with links to documents published on the site.

2.8 User Guide

This section provides all instructions to facilitate the data queries and information on conventional symbols used by CountrySTAT for dissemination to internal calculations, takes into account the following symbols in terms of the statistical implications.

2.9 Links

It includes other institution website links relevant for CountrySTAT activities. The structure is as follows:

- **National:** it includes the official websites of national institutions such as "Ministry of Agriculture," National Bureau of Statistics ", etc.

- **International:** it includes the official websites of international institutions such as "FAO, UNO, UEMOA (The West African Economic and Monetary Union), SADC, EAC etc...

2.10 Documents

Documents section refers to all publications of reports, technical analysis, publications, etc. that the country deems appropriate for the CountrySTAT activities.

The structure has been organized to gather the documents that are created by the country and those from International environments and therefore:

- **National Documents** (for example: publications such as Strategic plan of Agriculture Ministry, Agriculture Sector Development Strategy, News letter, etc.)
- **International Documents** (for example: documents such as Conference on Data Quality for International Organizations, etc.)

2.11 Data structure description

CountrySTAT considers countries specific data needs and it is based on FAO classification, concepts and definitions used in FAOSTAT. It is essential that this data be fitted into a comprehensive framework that:

- generates **harmonized information** using international concepts, definitions and classification for comparison and aggregation purposes and presents the information in a standard data structure
- presents country specific data with corresponding metadata at **decentralized and disaggregated level**
- **facilitates data exchange** between national and international levels (in particular with FAOSTAT) in order to reduce countries data reporting burden.

2.11.1 The main domains

The CountrySTAT framework organizes data into the following main domains:

- National Statistics – Core module
- Sub-National
- Global Strategy (Minimum Set of Core Data)
- Thematic modules
- National institutions
- International Partners
- All tables

- a) The "*National Core*" domain presents data per year at national level, corresponding to the concepts, definitions and other standard metadata by FAO.
The Core area takes into account data requirements for compiling satellite accounts for agricultural at national level. These data requirements relate to production of commodities, their trade and prices, use of land, farm machinery, fertilizers and pesticides, fisheries, food availability for consumption, population, labor force and forest production.
- b) The "*Sub-National*" domain includes the same categories as the Core with disaggregated data at sub-national level.
Data can be disseminated per Geographical Area (Administrative levels), Local Products (a description of local product and its main category is required) and time (Year and/or Month).

Trade and fisheries data in sub – domain are considered only for the federal republics (e.g. Tanzania or Nigeria).
- c) The "*Global Strategy (Minimum Set of Core Data)*" domain includes the key variables of the four groups (Economic, Social, Environmental and Geographic Location) to be collected by a larger number of stakeholders for each country. The Global Strategy to Improve Agricultural and Rural Statistics was prepared by the World Bank in collaboration with the FAO and Friends of the Chair working groups of the United Nations Statistical Commission UNSC (Eurostat, IMF, OECD, USDA, ISI, PARIS21, AfDB, IFPRI, BMGF, Representatives of National Statistical Offices and Ministries of Agriculture, etc.), and through extensive consultations with stakeholders.
- d) The "*Thematic Modules*" domain includes some complex modules and relevant indicators for the national statistics (for example: FBS= Food Balance Sheet, SUA= Supply Utilization Accounts, Food Security, etc.). This is a variable area and can be expanded /shrunk according to country needs.
- e) The "*National Institutions*" domain includes data coming from single national institutions as required by the country.
- f) The "*International Partners*" domain includes data coming from other international organizations, associations, etc. relevant to the country.
- f) The "*All tables*" domain contains all tables together, that have been disseminated in all main mentioned categories.

3 Methodology

The CountrySTAT methodology to make data comparable and consistency at world level is based on the adopting the concepts, definitions and classification used by FAO. Data collected using national standards can be converted to international standards before disseminating into official web sites as historical series in two different modules and organized as follows:

- 1) "**National - CORE**". This is a set of indicators that present harmonized information using international concepts, definitions and classification for comparison and aggregation purposes. They present the information in a standard data structure in order to allow users to compare data at international level.
- 2) "**Sub-National**". This module includes the same categories (domains and indicators) described in the "National - CORE" area with disaggregated data at sub national level according to the national classification. In some countries, national data using national classification can also be found here.
Data in this domain (sub-national) is consistent with data in National- CORE

A correspondence table is provided to ensure linkage and coherence between the national classification at sub-national level and the international classification at National - CORE level.

This data has been collected and elaborated by the Agricultural Censuses, Surveys and Administrative Records.

3.1 Classifications, concepts and definitions of international data set

To ensure comparability and consistency of data on agriculture and food among different countries and areas of statistics a reference document is available on national CountrySTAT web site (for example on http://www.countrystat.org/resources/metadata_en.pdf). It provides information on data structure, the concepts and definitions common to FAOSTAT and CountrySTAT framework. Moreover, the Statistics Division of FAO has developed a document on commodities classification and relative concepts and definitions. It includes the codes, titles, scientific and common names and definitions.

3.1.1 Classification of FAO Commodity (List - FCL)

The classification of agriculture commodities currently used by FAO is the FAOSTAT Commodity List (FCL). The FCL was developed in the 1960s and was originally based on SITC, the Standard International Trade Classification of the UN. It includes 683 commodities, both primary and processed products, grouped into 20 chapters. The FCL also includes some 130 agriculture inputs such as fertilizers, pesticides and machinery. Fishery and forest products are collected by other divisions and they are scattered also by FAOSTAT. It does not cover fishery and forestry products.

The purpose of the FCL is to provide a framework for collecting and analyzing data on production and trade of crops and livestock and, ultimately, to compile the Supply Utilization Accounts and Food Balance Sheets (SUA/FBS) for the estimation of undernourishment. Its structure reflects the item "commodity tree", which means that the primary crop and its derived products are traceable all along the value chain of agricultural production.

Concerning the codes system, each product primary or secondary is associated to a unique numerical code of four digits (XXXX).

With regard to the commodities description the whole list is available on <http://www.fao.org/WAICENT/faoinfo/economic/faodef/fdef01e.htm>

3.1.2 Classification of Trade data: The Harmonized System (HS)

For all indicators which refer to imports and exports, the same FAO classifications must be used to maintain consistency in the sub-domains.

However, trade data are collected by National Customs offices and classified under the HS (Harmonized Commodity Description and Coding System and services WCO) used for trade statistics.

The HS, developed and maintained by the World Customs Organization (WCO), is the trade nomenclature most widely used in the world. 206 countries, territories or customs or economic unions utilize it as the basis for Customs tariffs and for the compilation trade statistics. In HS, commodities are generally classified according to raw or basic material, to the degree of processing, to the use or function and economic activities. HS is a detailed listing of commodities rather than a proper classification for the purpose of organizing official statistics

The HS version currently in use is the HS 2007, and the forthcoming HS 2012 version will enter into force on the 1st January 2012. The review process for the next 2017 version has also already started.

To disseminate this data in order to be comparable it is necessary to reclassify them and grouped as requested by the FAO classification. The raw data from the Harmonized System, that represents the data sources of CountrySTAT published data, will be stored on the “Miami” server by using the program PX-Publisher (Exchange Area) in raw format as a reference document.

3.1.3 Classifications of Land

The classification adopted by FAO is the System of Environmental and Economic Accounts (SEEA)

The FAO Statistics Division collects and disseminates data on land use through FAOSTAT and the World Programme for the Census of Agriculture (WCA) .

The SEEA, undertaken within the joint responsibility of the UN, the European Commission, the IMF, the OECD and the World Bank, is a multi-purpose, conceptual framework that describes the interactions between the economy and the environment and the changes in the state of the environment over time. It brings together, in a single framework, information on water, minerals, energy, timber, fish, soil, land and ecosystems, pollution and waste, production, consumption and accumulation. Each of these areas has specific and detailed measurement approaches that are integrated in the SEEA to provide a comprehensive view. Chapter 5 of the SEEA on “Asset accounts” include a section on land use and land cover where international standard classifications for land use and land cover are presented.

3.1.4 CountrySTAT Classifications

The classifications adopted by CountrySTAT are described in the document [Concepts and Definitions](#) and carried by sub-domains as follows:

Sub-domains	Commodities classification and main categories
<ul style="list-style-type: none"> • Production • Food availability • Trade • Prices • Land and irrigation • Pesticides (consumption) 	<ul style="list-style-type: none"> • Classification and definitions of FAO Statistics Division
<ul style="list-style-type: none"> • Trade 	<ul style="list-style-type: none"> • Classification and definitions of FAO Statistics Divisions for aggregated products at international level and disseminated on the web site • Classification and definitions of International Harmonized System. Products come from national trade offices and used for CountrySTAT system as reference data source (to be uploaded into « Area Exchange » of PX-Publisher tool and archived in CountrySTAT web server).
<ul style="list-style-type: none"> • Machinery • Pesticides (imports and exports) • Fertilizers • Forestry 	<ul style="list-style-type: none"> • Classification and definitions of International Harmonized System
<ul style="list-style-type: none"> • Fisheries • Water • Value Added 	<ul style="list-style-type: none"> • Data is aggregated in macro indicators. Classifications and definitions are defined respectively by FAO Fisheries and Meteo and ESS Divisions

2. Summary of adopted classifications

3.2 National adapting of FAOSTAT nomenclature to agricultural and food products national statistics

During the CountrySTAT national development process, it emerged that very few countries have an exhaustive list of agricultural and food products or adopted a systematic international classifications available for archiving their data.

The following guide put together the conventions, definitions and concepts on the development of a nomenclature, and it is generally applicable to any national approach to create a commodities classification.

The objective proposal is to help countries to develop their national nomenclature of agricultural and food products and to enable them to develop their own classifications that fit into the principles of consistency and the work continuity for the adaptation of international classifications to national contexts.

The next chapters provide an overview of some international classifications currently adopted and included in the general rules to develop a nomenclature. The last part includes a short presentation of the FAOSTAT structure nomenclature and the suggestion on how to adapt this nomenclature to the local national needs, while ensuring universal logical hierarchical compatibility, both ascending and descending.

3.2.1 Overview of other international classifications

3.2.1.1 Classification of Functions of Government and Public Administration (COFOG)

The functional classification of government expenditure (COFOG) was developed by the Organization for Economic Cooperation and Development and published by the Statistics Division of the United Nations. The COFOG provides a detailed breakdown of expenses by function, or socio-economic objectives, as governments strive to achieve.

The functions are classified on a three-tier basis system. The first level comprises 10 three-digit categories called divisions, relating to economy matter (division 704) or environmental (division 705). Within each division, there are several groups of four-digit categories: Agriculture, forestry, fishing and hunting (7042) and Fight against Pollution (7053). Finally, each group is subdivided into one or more other classes or five-digit categories: Agriculture (70 421) or fight against pollution (70530).

The “COFOG” examines how to evolve over time the government spending for specific purposes or functions. Usually, public accounting is not appropriate for this type of review because it reflects rather the administrative structures of government. Not only the time series may be distorted by administrative reorganization, but also by the fact that some jurisdictions may be responsible for several functions at once, or share a function with other jurisdictions.

If, for example, the Public Administration creates a new department to consolidate some functions previously handled by multiple departments or multiple levels of government, the accounting statements are not generally suitable for comparison over time spending on these objectives.

The COFOG is also used to compare internationally, the degree of involvement of government in economic and social functions. In addition, it avoids the potential problem raised by the reorganizations in the government of a country; the COFOG overcomes the problem of organizational differences from one country to another.

3.2.1.2 National System of Public Accounting (SNPC)

The National System of Public Accounting (“Système National de Comptabilité Publique (SNPC)”) is a nomenclature adopted by member countries of the Organization for Economic Cooperation and Development (OECD).

It also applies to government spending and is more or less the third level of COFOG. This is precisely the version of DAC-5/SNPC which was used. The Development Assistance Committee (DAC) is the main forum of the OECD and it is responsible for matters relating to cooperation with developing countries.

3.2.1.3 Economic and Statistical Observatory of Sub-Saharan Africa (AFRISTAT)

The Economic and Statistical Observatory of Sub-Saharan Africa is a list of activities and products of member countries AFRISTAT (NAEMA and NOPEMA).

The activities classification was inspired by the International Standard Industrial Classification of all Economic Activities - Third Revision (ISIC revised version 3) and the products of the Central Product Classification (CPC).

The NOPEMA which is the classification of products is too aggregated so that the countries that adopted it, found difficulties in comparing their own data with other international classifications such as ISIC, HS or FAOSTAT for specific issues of food analysis purposes.

3.2.2 Basic Methodological aspects for developing a nomenclature

3.2.2.1 The objectives

The nomenclatures are created to be able to name, describe and classify / organize activities to manage and handle a system, for example the rural sector. They also allow to describe quantitatively a reality (aggregate things belong to the same category), to produce and exchange information (Fabienne Benninghoff, February 2007).

In a given system, the nomenclature allows to harmonize the concepts and definitions. The activity classifications are designed mainly to facilitate the organization of economic and social information. Their purpose is essentially statistical and other criteria of a legal or institutional nature are excluded as such in their construction.

Thus, the data collection and organization are the first purpose in the process of developing a nomenclature, taking into consideration this aim helps in carrying out the development work of the nomenclature.

3.2.2.2 Prerequisites

A first step in developing a nomenclature is to examine the prerequisites needed to perform a classification process. It should first list the prerequisites deemed necessary and then see if they are met. The prerequisites to perform the development of a classification are as follows:

- A unique functional system in common with all stakeholders. This is a unique system to be shared among stakeholders through the exchange of information. The system must have links that can be hierarchical or functional created by nature or by the organizational system set up by the public authority.
- Rules of accessibility to treatment and data clarified and differentiated. The information sharing of the system requires clear processing and rule sharing. It is important that the user closely follows the specific rules (information sharing). The definition of the “clear and appropriate unit measure” for each activity or product is an example of the information processing rule which all users have to follow. At the same time, it is important to have a regulatory framework for the application of the nomenclature that requires users to respect strict rules in the system. Also, the shared information must be clear and unambiguous and differentiated in the system to avoid double counting.
- Accessible nomenclature and data potentially shareable regardless of location. In the system, nomenclature and data from all users have to be available and accessible at any time regardless of location of access. To facilitate the user a good solution is to use the Internet to set an on-line nomenclature.
- A unique code has to be associated to each element for the identification and recognition. Each element belongs to the nomenclature have to be identified with a unique code.

3.2.3 Structure

The design of a nomenclature structure has the same concept of a database design structure and analytical work for the establishment of an information system. Large national and international classifications have a hierarchical structure. The articulation of the levels of classification is done by fitting successive partitions. They use almost numerical codes. Thus, the transition level is achieved by the addition of numeric characters. You can work at different levels of aggregation: the most detailed level at the most aggregated.

Example of nomenclature structure (SNPC):

Level 1	Level 2	Level 3
1-Agriculture, Forestry, Fisheries and Hunting	11-Agriculture	111-Agricultural policy and administrative management
		112-Agricultural Development
		113-Agricultural land resources
		114-Water resources for agricultural use
		115-Agrarian Reform
	12 -Forestry	121-Forestry policy and administrative management
		122-Forestry development
		123-Reforestation
		124-Education and training in forestry
		125-Forestry research

Level 1	Level 2	Level 3
	13- Fisheries	131-Fishing policy and administrative management
		132-Fisheries Development
		133-Education and training in the field of fisheries
		134-Research in the field of fisheries
		135-Services in the field of fisheries
	14- Hunting	141-Hunting policy and administrative management
		142- Development of hunting
		143-Education and training in the field of hunting
		144-Research in the field of hunting
		145-Services in the field of hunting
		142-Development of 142-hunting
		143-Education and training in the field of hunting
		144-Research in the field of hunting
		145-Services in the field of hunting

Example of a nomenclature structure (FAOSTAT):

FAOSTAT CODE	COMMODITY	DEFINITIONS, COVERAGE, REMARKS
0083	SORGHUM <i>Sorghum spp.:</i> guinea corn (<i>S. guineense</i>); common, milo, feterita, kaffir corn (<i>S. vulgare</i>); durra, jowar, kaoliang (<i>S. dura</i>)	A cereal that has both food and feed uses. Sorghum is a major food grain in most of Africa, where it is also used in traditional beer brewing. It is desirable to report hybrid and other varieties separately.
0084	Flour of Sorghum	Broadly defined to include meal, groats and pellets.
0085	Bran of Sorghum	See Chapter 11 .
0086	Beer of Sorghum	See Chapter 15 .

More details on the whole commodities FAOSTAT classification with related definitions are available on <http://www.fao.org/WAICENT/faoinfo/economic/faodef/fdef01e.htm>

3.2.4 Quality requirements

There are various characteristics according to the different purposes (formal, semantic, practical, and technical). Thus, the quality of a classification can be judged through these purposes.

- In **formal terms**: according to the accuracy that the nomenclature provides, it must be a **nested sequence of partitions**, without omission or duplication. Avoid double input or the overlap between activities and ambiguities that could make the nomenclature confusing and complex. Each activity must be distinct from others and a product or service has to be clearly identified. The nomenclature should be

universal (everyone must be able to find it) in the field of study and **unique** (no confusion in the classification of activities in the sub-assemblies). Therefore each activity must be accompanied by a clear and detailed as we know clearly what it actually covers.

- At **semantic level**: according to the relevance of cutting classes must include the objects according to their similarity, the class must be **homogeneous** and **exclusive**. Classifications should be able to reflect the changes and they should be **scalable**. In other words, classifications must adapt to change over time without breaking with the past. Thus, to ensure continuity and sustainability of semantic codes, transcoding must be made between successive versions of the classification if the revision completely affects the structure of the nomenclature. Otherwise, it is not necessary to do the transcoding. Only in the coding system, it would be advisable to have a flexible structure to include additional new activities.
- On a **practical level**: according to the clarity of the accompanying documentation, a nomenclature has to be **documented** to avoid interpretations. In other words, a classification has to be accompanied by a manual or a dictionary. This would mean that it is necessary to discuss the contents of each activity used in the manual to avoid interpretations by giving a clear definition so that all users are able to understand the same meaning of the functional system (rural sector).
- On the **technical level**: the nomenclature is judged by the following elements:
 - the **clarity of the code** used to identify classes of nomenclature (often used to describe a level of classification the number of digits that contains a numeric code)
 - the **quality check procedures** of coding introduced in uploading system or in the interface,
 - the availability of **transcoding tables** that translates a classification to another where appropriate.

To summarize the quality of a nomenclature, it is a management nomenclature system that should be **flexible and readable by all users**, with the possibility of direct intervention by each user, to introduce their specific requests by ensuring overall coherence in the system. Moreover, it should be **scalable in time** so that the information system can easily integrate the developments and changes of classification of initial commodities in the general framework.

3.2.5 The proposed nomenclature structure

3.2.5.1 Characteristics of the nomenclature

The commodity codes association at the national level often highlights national specifics such as agricultural crop varieties that are derived from a product or in the production system, countries often needs to have a coding system more detailed.

Also, for the development of national nomenclature of agricultural products and food, countries start from the root base to four positions FAOSTAT (XXXX).

To get a code for national local products starting from FAOSTAT code system, it only adds two positions (YY) to follow after the FAOSTAT codes database so that each local product will be six positions (XXXXYY).

When the product as presented in the nomenclature FAOSTAT does not differentiate according to multiple domestic varieties (or any other partition full, complete) in national statistics, we will follow the basic coding with two zeros (00).

When a partition is the product in national statistics, the various local products have to be listed and associated to a sequential number 01, 02, ..., NN, and the final product within the subdivision that will be added to the root four position (XXXX) FAOSTAT to obtain the following structure: XXXX01, XXXX02, XXXX03, ..., XXXXNN for the last variety.

Example for sorghum in the country where there are several varieties of sorghum in national statistics (white sorghum, red sorghum), we have:

CODE FAO	FAO COMMODITY	DEFINITIONS, COVERAGE, REMARKS	NATIONAL CODE	LOCAL NOM	DEFINITION OF LOCAL VARIETY
0083	SORGHUM <i>Sorghum spp.</i> : guinea corn (<i>S. guineense</i>); common, milo, feterita, kaffir corn (<i>S. vulgare</i>); durra, jowar, kaoliang (<i>S. dura</i>)	A cereal that has both food and feed uses. Sorghum is a major food grain in most of Africa, where it is also used in traditional beer brewing. It is desirable to report hybrid and other varieties separately.	008301	White Sorghum	Sorghum flour obtained by grinding the grain is white.
0083	SORGHUM <i>Sorghum spp.</i> : guinea corn (<i>S. guineense</i>); common, milo, feterita, kaffir corn (<i>S. vulgare</i>); durra, jowar, kaoliang (<i>S. dura</i>)	A cereal that has both food and feed uses. Sorghum is a major food grain in most of Africa, where it is also used in traditional beer brewing. It is desirable to report hybrid and other varieties separately.	008302	Red Sorghum	Sorghum flour obtained by grinding grain is red. Note: the red colour of grains is not sufficient to confer the title red sorghum. Indeed, the colour of the grains can be red, while the flour is white.

Note: For a main product, in cases where the commodity disaggregation appears in a variety while other varieties are grouped together, we codify 01, 02, ... NN disaggregated varieties and codify 99 (Other varieties: nes) the grouped subset that will be added to the main FAOSTAT codification.

Furthermore, the AFRISTAT member countries should be coherent in creating a correspondence table between the national classifications and NOPEMA classification.

In all, through the establishment of RegionSTAT and the need for aggregation of local statistics at the Regional Economic Union, it is important that in each economic region, the countries work to achieve a harmonized regional classification consistent with the nomenclature of FAOSTAT.

3.2.5.2 Principle to create a nomenclature

The general guidelines to create a national classification have been based on considering as reference the FAOSTAT coding system.

Also, to ensure the quality of the nomenclature, guidelines will be given to the national structures of agricultural statistics to create code products, as follows:

- each local product must be identified by a unique code to six positions and recognized for its identification;
- the specific agronomic or economical definition and content has to be clearly defined to ensure the understanding. Each local product must appear once and only once in the list of local products to avoid duplication;
- the name of the local product must be accompanied by clear documentation. In other words, it is necessary to provide detailed information of the product to avoid interpretations by giving a clear definition of the commodity so that all users can receive the same understanding in the statistical system. In addition, to ensure the reliability, it also requires that the product definition could be verifiable at least with one official source document (documents, reports of a legal structure or recognized as such in the field) ;
- it is necessary that a product has to be associated with one and only one unit of measurement such as: kilometres, litres, cubic meter, etc.
- a nomenclature should not leave room for interpretation. Each product must be distinct from others and a product or service has to be clearly identified. For this reason, each local product has to be accompanied by a clear and detailed description in a document (a manual) so that it is clear what it actually covers (unique character of the nomenclature). This manual has to be provided together with the nomenclature to facilitate the understanding of concepts and definitions.

3.3 Main Indicators

The main data set was selected to allow the calculation of more complex indicators that refer to food and agriculture.

Requested Standards			
Domains	Statistics/Indicators	Matrix code	Units
Production	Production quantity of Primary Crops	(XXXCPD010)	tonnes
	Area Harvested	(XXXCPD015)	Ha
	Area Sown	(XXXCPD016)	Ha
	Seed	(XXXCPD020)	tonnes
	Feed	(XXXCPD025)	tonnes
	Production of Selected Processed Crops	(XXXCPD030)	tonnes
	Number of Live Animals	(XXXCPD035)	head
	Number of female animals	(XXXCPD040)	head
	Slaughtered Animals	(XXXCPD045)	Number
	Production of Meat	(XXXCPD050)	tonnes
	Milking animals	(XXXCPD055)	head
	Production of milk	(XXXCPD060)	tonnes
	Laying animals	(XXXCPD065)	head
	Production of Hen Eggs and Other Eggs	(XXXCPD070)	tonnes
	Other Livestock products	(XXXCPD075)	tonnes
Trade	Import Value of Crops and livestock products	(XXXCTR010)	1000 US\$
	Export Value of Crops and livestock products	(XXXCTR015)	1000 US\$
	Re-export Value of Crops and livestock products	(XXXCTR020)	1000 US\$
	Import Value of Live Animals	(XXXCTR025)	1000 US\$
	Export Value of Live Animals	(XXXCTR030)	1000 US\$
	Re-export Value of Live Animals	(XXXCTR035)	1000 US\$
	Export Quantity of Crops and livestock products	(XXXCTR040)	tonnes
	Import Quantity of Crops and livestock products	(XXXCTR045)	tonnes
	Import Quantity of Live Animals	(XXXCTR050)	head
	Export Quantity of Live Animals	(XXXCTR055)	head
	Re-export Quantity of Crops and livestock products	(XXXCTR060)	tonnes
	Re-export Quantity of Live Animals	(XXXCTR065)	head
	Population	Total population	(XXXCPO010)
Males			
Females			
Rural population			
Urban population			
Agricultural population			
Non-agricultural population			
Food Availability	Food supply quantity (tonnes)	(XXXCFA010)	tonnes
	Food supply quantity (kg/capita/yr)	(XXXCFA015)	kg/capita/yr
	Food supply quantity (g/capita/day)	(XXXCFA020)	g/capita/day
	Food supply (kcal/capita/day)	(XXXCFA025)	Kcal/capita/day
	Protein supply quantity (g/capita/day)	(XXXCFA030)	g/capita/day
	Fat supply quantity (g/capita/day)	(XXXCFA035)	g/capita/day

Requested Standards			
Domains	Statistics/Indicators	Matrix code	Units
Labor	Total economically active population	(XXXCLA010)	1000 units
	Male economically active population		
	Female economically active population		
	Total economically active population in Agriculture		
	Male economically active population in Agriculture		
	Female economically active population in Agriculture		
Land Use and Irrigation	Area - Land Use	(XXXCLI010)	1000 Ha
	Purchase of Land	(XXXCLI015)	local currency/hectar
	Rent of Land	(XXXCLI020)	local currency/hectar
	Irrigation Charges	(XXXCLI025)	local currency/1 cubic meter
Machinery	In Use	(XXXCMA010)	Number
	Import Quantity	(XXXCMA015)	Number
	Import Value	(XXXCMA020)	US\$
	Export Quantity	(XXXCMA025)	Number
	Export Value	(XXXCMA030)	US\$
Pesticides	Consumption	(XXXCPE010)	tonnes
	Import Value	(XXXCPE015)	US\$
	Export Value	(XXXCPE020)	US\$
Fertilizers	Production Quantity	(XXXCFE010)	tonnes
	Import Quantity	(XXXCFE015)	tonnes
	Export Quantity	(XXXCFE020)	tonnes
	Non Fertiliser Use Quantity	(XXXCFE025)	tonnes
	Consumption Quantity	(XXXCFE030)	tonnes
Prices	Producers' Prices for Primary Crops and Livestock products	(XXXCPR010)	Local currency
	Agricultural Producer Prices Index (PPI)	(XXXCPR020)	Index
	Agricultural Wholesale Price Index (WPI)	(XXXCPR030)	Index
	Food Consumer Price Index (CPI)	(XXXCPR040)	Index
Forestry	Production Quantity of Forestry products	(XXXCFO010)	Tonnes or Cubic meter
	Import Quantity of Forestry products	(XXXCFO015)	Tonnes or Cubic meter
	Export Quantity of Forestry products	(XXXCFO020)	Tonnes or Cubic meter
	Import Value of Forestry products	(XXXCFO025)	US\$
	Export Value of Forestry products	(XXXCFO030)	US\$
Fisheries	Production Quantity of Fish Capture (Total, Inland, marine)	(XXXCFI010)	tonnes
	Production Value of Fish Capture (Total, Inland, Marine)	(XXXCFI020)	US\$
	Production Quantity of inland aquaculture	(XXXCFI030)	tonnes
	Production Value of inland aquaculture	(XXXCFI040)	US\$
	Production Quantity of marine/brackish water aquaculture	(XXXCFI050)	tonnes
	Production Value of marine/brackish water aquaculture	(XXXCFI060)	US\$
	Total quantity and value of annual imported fish products	(XXXCFI070)	Quantity(t), Value (US\$)
	Total quantity and value of annual exported fish products	(XXXCFI080)	Quantity(t), Value (US\$)
Water	Agricultural water withdrawal as % of total water withdrawal	(XXXCWA010)	%
	The rainfall amount by specific areas	(XXXCWA015)	mm/day/dekad/week/year/long term
Value Added	Value Added by sector (constant prices)	(XXXCVA010)	US\$/local currency
	Value Added by sector (current prices)	(XXXCVA020)	US\$/local currency

3.3.1 The codes of the main indicators (matrix codes)

All the “Core” indicators are represented by tables. The tables should be placed in the publication web server.

It is necessary to convert the original table-indicator (in most cases in excel format) into a text file to be recognized by the program of the server, it is called PX-file.

Identification of published tables (indicators), per country, region and area in each site, requires a logical system organization of table structure; therefore a unique code has to be associated with each indicator table and which serves as “filename”. These codes facilitate data management techniques in the phases of loading, extraction, comparison and possible software functionality improvements of the CountrySTAT framework.

It is therefore necessary to create a "standard" coding system of PX files.

The CountrySTAT system software associates the PX-files (in text format) to a "PX-file matrix" that contains the list of all PX-files codes (filenames). The PX-file code (filename) always has to correspond uniquely to a single code, which is included in the PX-file code matrix list. They must have the same syntax.

3.3.2 The components of matrix codes

The CountrySTAT software system associates a PX-file (in text format) to an IT matrix. The code PX-file and PX-matrix file have to be always the same.

This code consists of a maximum of 9 digits that identify the components of the file as follows:

- a) 3 digits to identify the country code (standard codes of the countries of FAO)
A figure to identify the main areas (C = Core, S = Sub-National, M = Thematic modules, I=Institutions, P=Partners).
For federal republics, the field "local statistics" is divided into different geographical areas that are identified by S1, S2, S3 ... (i.e. S + component).
- b) 2 digits to identify the domain (PD = Production).
- c) 3 digits to identify a numbering sequence indicator-table (PX-file).

The federal republics have one more figure (10 digits) that identifies the geographic area (States, for example Tanzania has Mainland and Zanzibar).

The details are as follows:

- **Core:** it includes sub-domains with sets of data (standards requested). The indicators that are disseminated in this domain refer to the products of countries by annual time series.

For indicators, the associated codes are:

- «Quantity production of primary crops» is XXXCPD010
- «Harvested area » is XXXCPD015

Further relevant indicators (for example Yield of primary Crops) can be added following the structure and using an internal numbering continuing the existing one (i.e. for Yield it could be XXXCPD011, XXXCPD012, etc.).

- **Sub-National:** it includes the sub domains with sets of data (standard required), but disaggregated at geographical level and with local products. In this domain it is necessary to write the title with the indicator variable "quantity of production of primary cultures" that becomes "Production Quantity of primary cultures by regional, local product and year.

The codes to maintain consistency with the basic module are as follows:

- «Quantity of crop production by primary cultures at regional level, local product and Year » XXXSPD010
- «Quantity of production by primary cultures at departmental level, local product and Year» XXXSPD110
- «Production quantity of primary cultures by regional, local product, year and month» XXXSPD210
- «Quantity of production by primary cultures departmental level, local product, year and month» XXXSPD310

- **Thematic Modules:** this domain is variable and can be expanded /reduced according to country needs.

The codes have the same creation rule as below and after the 9 digit number (including country codes) but the field will be defined by the country with two figures, as well as the number that has to be composed of 3 digits to specify the table in the domains as follows:

For example:

- «Primary School statistics» : the table should be inserted in the Thematic Module, ED = Education, the code of the matrix should be XXXMED001. The name of the sub-domain module M = (M is fixed), ED = education (this definition is linked to indicators that the country wants to publish.

- **National institutions and international partners:** these fields are variable and may be expanded /reduced according to country needs. Only country and domain codes are fixed, the sub-domain is defined by the country with two figures, as well as the sequence of numbers.

When it is desired to add other indicators that are not included in the Core list and consequently not included in the pre-defined PX-files matrix, the user/administrator can associate a new sequential number to the table that is not in the list (for example "Yield of primary crops " matrix could be XXXCPD011 or XXXCPD012). In this case, it is possible to use a not pre-fixed number as this indicator is not included in the list of Core indicators and therefore it is not part of a possible automatic data exchange application.

3.4 “CORE” module: Aggregated data

These indicators refer to international standards applied at national level.

«Core Module» indicators are expressed with three variables:

- product: data are grouped by main products as classified by FAO;
- geographic: data are grouped by country;
- time: data are grouped by year;

and measurement units are expressed in international units of FAO.

3.4.1 CORE module: Indicators and matrix

The indicators that refer to the international standards and the matrix of CORE module are as follows:

Domains	"Standards" Core Indicators by product and year	Code de la matrice			Dimensions/Variables of table	
		FAOCode	Domain	Sub-domain		Sequential Number
Production	Production quantity of Primary Crops	XXX	C	PD	010	Product -Year
	Area Harvested	XXX	C	PD	015	Product -Year
	Area Sown	XXX	C	PD	016	Product -Year
	Seed	XXX	C	PD	020	Product -Year
	Feed	XXX	C	PD	025	Product -Year
	Production of Selected Processed Crops	XXX	C	PD	030	Product -Year
	Number of Live Animals	XXX	C	PD	035	Product -Year
	Number of female animals	XXX	C	PD	040	Product -Year
	Slaughtered Animals	XXX	C	PD	045	Product -Year
	Production of Meat	XXX	C	PD	050	Product -Year
	Milking animals	XXX	C	PD	055	Product -Year
	Production of milk	XXX	C	PD	060	Product -Year
	Laying animals	XXX	C	PD	065	Product -Year
	Production of Hen Eggs and Other Eggs	XXX	C	PD	070	Product -Year
	Other Livestock products	XXX	C	PD	075	Product -Year
	Trade	Import Value of Crops and livestock products	XXX	C	TR	010
Export Value of Crops and livestock products		XXX	C	TR	015	Product -Year
Re-export Value of Crops and livestock products		XXX	C	TR	020	Product -Year
Import Value of Live Animals		XXX	C	TR	025	Product -Year
Export Value of Live Animals		XXX	C	TR	030	Product -Year
Re-export Value of Live Animals		XXX	C	TR	035	Product -Year
Export Quantity of Crops and livestock products		XXX	C	TR	040	Product -Year
Import Quantity of Crops and livestock products		XXX	C	TR	045	Product -Year
Import Quantity of Live Animals		XXX	C	TR	055	Product -Year
Export Quantity of Live Animals		XXX	C	TR	050	Product -Year
Re-export Quantity of Crops and livestock products		XXX	C	TR	060	Product -Year
Re-export Quantity of Live Animals		XXX	C	TR	065	Product -Year
Population	Total population	XXX	C	PO	010	Indicator - Year
	Males					
	Females					
	Rural population					
	Urban population					
	Agricultural population					
Non-agricultural population						
Food Supply	Food supply quantity (tonnes)	XXX	C	FA	010	Product -Year
	Food supply quantity (kg/capita/yr)	XXX	C	FA	015	Product -Year
	Food supply quantity (g/capita/yr)	XXX	C	FA	020	Product -Year
	Food supply (kcal/capita/day)	XXX	C	FA	025	Product -Year
	Protein supply quantity (g/capita/day)	XXX	C	FA	030	Product -Year
	Fat supply quantity (g/capita/day)	XXX	C	FA	035	Product -Year
Labor	Total economically active population	XXX	C	LA	010	Indicator - Year
	Male economically active population					
	Female economically active population					
	Total economically active population in Agriculture					
	Male economically active population in Agriculture					
	Female economically active population in Agriculture					
Land and irrigation	Area - Land Use	XXX	C	LI	010	Category -Year
	Purchase of Land	XXX	C	LI	015	Category -Year
	Rent of Land	XXX	C	LI	020	Category -Year
	Irrigation Charges	XXX	C	LI	025	Category -Year
Machinery	In Use	XXX	C	MA	010	Category -Year
	Import Quantity	XXX	C	MA	015	Category -Year
	Import Value	XXX	C	MA	020	Category -Year
	Export Quantity	XXX	C	MA	025	Category -Year
Pesticides	Export Value	XXX	C	MA	030	Category -Year
	Consumption	XXX	C	PE	010	Commodity -Year
	Import Value	XXX	C	PE	015	Commodity -Year
Fertilizers	Export Value	XXX	C	PE	020	Commodity -Year
	Production Quantity	XXX	C	FE	010	Commodity -Year
	Import Quantity	XXX	C	FE	015	Commodity -Year
Prices	Export Quantity	XXX	C	FE	020	Commodity -Year
	Non Fertiliser Use Quantity	XXX	C	FE	025	Commodity -Year
	Consumption Quantity	XXX	C	FE	030	Commodity -Year
	Producers' Prices for Primary Crops and Livestock products	XXX	C	PR	010	Product -Year
	Agricultural Producer Prices Index (PPI)	XXX	C	PR	020	Product -Year
Forestry	Agricultural Wholesale Price Index (WPI)	XXX	C	PR	030	Product -Year
	Food Consumer Price Index (CPI)	XXX	C	PR	040	Product -Year
	Production Quantity of Forestry products	XXX	C	FO	010	Commodity -Year
	Import Quantity of Forestry products	XXX	C	FO	015	Commodity -Year
	Export Quantity of Forestry products	XXX	C	FO	020	Commodity -Year
Fisheries	Import Value of Forestry products	XXX	C	FO	025	Commodity -Year
	Export Value of Forestry products	XXX	C	FO	030	Commodity -Year
	Production Quantity of Fish Capture (Total, Inland, marine)	XXX	C	FI	010	Indicator -Year
	Production Value of Fish Capture (Total, Inland, Marine)	XXX	C	FI	020	Indicator -Year
	Production Quantity of inland aquaculture	XXX	C	FI	030	Indicator -Year
	Production Value of inland aquaculture	XXX	C	FI	040	Indicator -Year
	Production Quantity of marine/brackish water aquaculture	XXX	C	FI	050	Indicator -Year
	Production Value of marine/brackish water aquaculture	XXX	C	FI	060	Indicator -Year
	Total quantity and value of annual imported fish products	XXX	C	FI	070	Indicator -Year
	Total quantity and value of annual exported fish products	XXX	C	FI	080	Indicator -Year
Water	Agricultural water withdrawal as % of total water withdrawal	XXX	C	WA	010	Indicator -Year
	The rainfall amount by specific areas	XXX	C	WA	015	Indicator -Year
Value added	-	XXX	C	Va	010	Indicator -Year

3. Tables and codes of the matrix of «core» module

3.5 “Sub-national” module: Disaggregated data

The «**Sub-National**» module contains the same indicators of the CORE and they are expressed with disaggregated data as follows:

- product : data are disaggregated by local products from the classification of countries;
- geographic: data are disaggregated by region and / or province (1 or 2 disaggregation levels);
- time: data are expressed per year and /or per month (1 or 2 disaggregation levels);

The dimensions depend on the data disaggregation level for geographical and time variables.

Concerning the measurement units, they are expressed according to the units of the country.

With regard to the specific statistical data needs of the country, the producers of statistics are often led to publish official statistical data according to detailed levels. Thus, for a main product of the international classification, national statistics can be produced by detailed varied local varieties of the commodities according to agro-economic or biological characteristics.

The local products data is published in the “Sub National” CountrySTAT module, so that the countries could maintain the local national disaggregation statistics by local products as published officially with local product codes, and using the national classification.

It is important to ensure that the definition of the subcategories of the main product is such that the statistical aggregation of all sub-categories provides the measure of the single, comprehensive and integrated statistical size of the main product category. This category is associated with the international nomenclature.

Some examples are as follows:

- 1) Two types of crops are associated with 2 separated codes: white sorghum (105) and red sorghum (106).
- 2) Crops associated with a unique code: rice paddy and irrigated rice(103).

In general, two scenarios are possible:

- a) The local code of two or three varieties of products merged into the international nomenclature, corresponds to different codes in the national classification (example of a country, white sorghum and red sorghum have different codes in the national nomenclature, 105 and 106).
- b) The local code of two or three products merged into the international nomenclature, corresponds to the same code in the national classification (example of a country with two products: rice and irrigated rice. These products have the same local code 103 and the local statistics are available for each variety).

In both cases, separate the local statistical data for each produced variety.

For the case **a)** the local codes remain unchanged in the nomenclature of Correspondence Table.

For the case **b)** the TWG shall review the local coding to assign a code specific to each local variety of culture in local nomenclature and in the Correspondence Table.

NB: National statistics remain unchanged.

3.5.1 Sub national module: Indicators and matrix

The data is organized according to common rules and standards to enable comparison of the same indicator between countries.

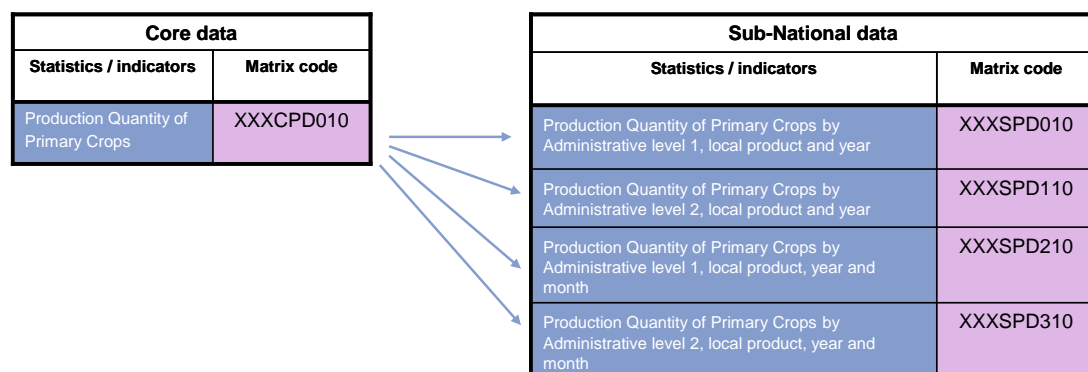
This system allows easy navigation since the sub- domains (sub categories) are repeated in the two main domains (Core and Sub-national statistics).

The relationship, between the Core and the Sub-national statistics, needs to maintain consistency and coherence of content. For this reason the same Core indicators are expressed at disaggregated levels (geographical administrative level and with product) in the “Sub-national” module and the variables are disaggregated as follows:

- The variables can be expressed by administrative level 1 (state or region) and administrative level 2 (province or district)
- The variables of time can be expressed by year and month
- The variable products may be expressed by the categories of local products with local codes (prepared by the Secretariat, defining a national classification of local products). If the Secretariat decides to publish the commodity statistics with the international classification (FAO), the product codes should be international product code (as used in the Core).

A good example of a homogeneous relation of data dissemination is as follows:

- In the «Core» table «Quantity production of primary cultures» (XXXCPD010);
- In the «Sub-National» table «Quantity production of primary cultures by administrative level 1, product and year » (XXXSPD010);



4. Example of connection between the Core data and Sub-National data

This module should include the same Core indicators in addition to other indicators relevant for the country.

Each indicator (table) is associated to a matrix code and should be named according to the following sequence:

- XXX= FAO Country code
- “C” or “S” = Domain
- “PD”, etc = Production, etc. sub-domain
- 010, 110, 210, 310 = code of indicator as follows:
 - 0 = combination of variables “Administrative level 1, local product and year”
 - 1 = combination of variables “Administrative level 2, local product and year”,
 - 2 = combination of variables “Administrative level 1, local product, year and month”
 - 3 = combination of variables “Administrative level 2, local product, year and month”
 - 5 = combination of variables «National level, local product et year”
 - 6 = combination of variables «National level, local product, year and month”

See the example in “Annex A1 Indicator codes and matrix codes of «sub-national data»”

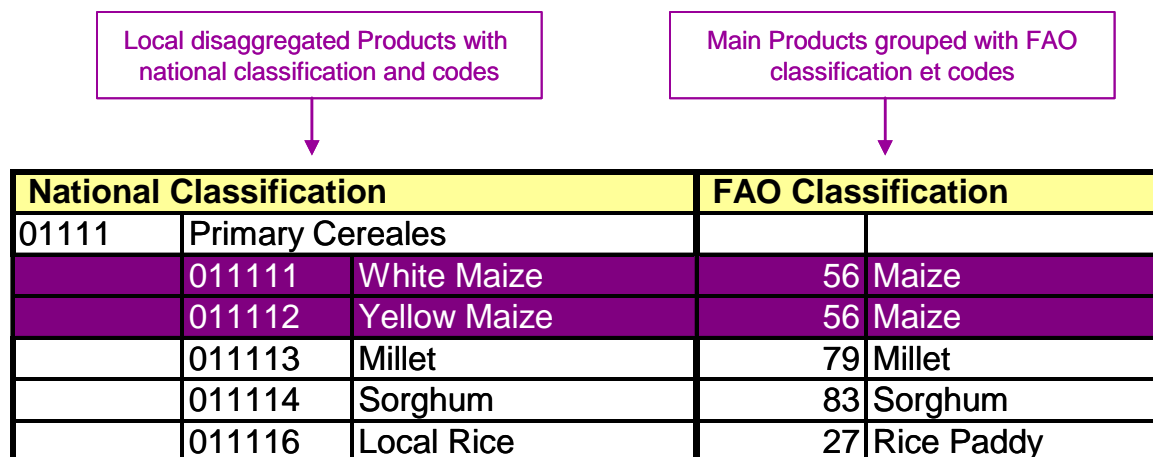
The codes (that also the filenames) of the indicators (tables) have to be listed in the matrix local statistics PX- files

3.6 The Correspondence Table between the National and International Classifications

In order to understand and compare data in CountrySTAT framework, coherence is necessary between data of Core and Sub-National domains that ensure the definitions and data coverage are consistent with the recommendations of international standards.

To do this, it is necessary to find a correspondence of agro- biological characteristics between the various local products related to and major products classified by FAO international classification with a correspondence table between the two classifications.

The table below shows the relationship between the classification of national and international product classification.



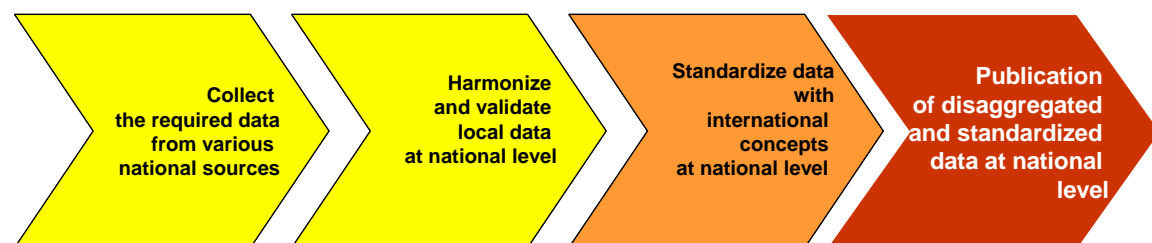
5. Table of correspondence between national and international classification

The example above shows products correspondence one by one (011114 Sorghum = 83 Sorghum) and a two local products that correspond to one major product (white maize 011111 + yellow maize 011112 =Maize 56).

The data in the Core is grouped by product (56 maize) and data in the sub –national statistics is disaggregated (white maize 011111, yellow maize 011112).

3.7 Publication process: Data Collection, Harmonization, Validation and Standardization

In the following paragraphs guidelines are reported for data collection and data publication through the steps of validation and harmonization process, by the Technical Working Group and presented in a standard format as follows:



6. Picture of data collection, validation and harmonization process

3.7.1 Requirements for data collection

During the preparation of CountrySTAT UEMOA project, member state participants based their work on data collection. They wrote a document (AFRISTAT) describing basic principles on data quality (agricultural and food products) to be considered for the data collection.

These rules are the main requirements to obtain data quality improvement for data collection phase.

Moreover, for comparison purposes, it is necessary that the user has all relevant information to assess the data quality for each country and how the data from several countries can be approached. Together with data collection, further useful information are very important such as data sources (census, surveys, administrative sources) the geographical coverage (national, urban, rural, etc..), the reference period (year, season, etc..), the adopted methodology to aggregate data in order to obtain requested indicators.

Taking into account all these factors, the adoption of the following principles for the collection of national data was proposed.

<p>• Principle 1</p>	<p>The first principle is to respect the overall data coherence.</p> <p>Given the fact that in countries, it often happens that the same information is available in several different jurisdictions and it differs from one jurisdiction to another, it was established to give priority to official data validated where possible by relevant bodies. The INS data (National Institution of Statistics) or the administration that produced data (Ministry of Agriculture, Commerce, etc.), should be preferred to supply statistics that could be conducted by a study or a consultant's report. In addition, preference should be given to sources with time series (covering our period of observation) to maintain consistency of information. If multiple sources are used to constitute a series, it is important that consultant analyzes series consistency.</p>
<p>Principle 2</p>	<p>The second principle concerns the need to specify the data sources.</p> <p>The data sources should be provided for each table. The accuracy of the source should be complete with the title of the document, the page number of the document used to fill the table, the department which issued the document and the department that owns the service. If we consider for example the production of seed cotton in 1990, it would set a bad example to indicate the source as the Ministry of Agriculture, the following details should be added: source = Ministry of Agriculture, Statistics Division, Agricultural Yearbook of Agricultural Statistics 1991. If multiple sources were used for filling a single table, it is necessary to distinguish the sources according to the lines.</p>
<p>Principle 3</p>	<p>The third principle relates to the concepts, definitions and the actual content of statistics and indicators for each country.</p> <p>Until the harmonization of these concepts effectively in all Member States, explanatory notes on concepts, definitions, scope, and reference period are necessary and should accompany publication of the data collected. Consultants were therefore asked if necessary to clarify the concepts used.</p>

3.7.2 Data Collection, Harmonization and validation at national level

After the initial phase of data and metadata collection, the phases of harmonization and standardization complete the whole process at national level.

CountrySTAT national activities include "Technical Working Group" meetings. This group is composed of national institutions (Ministry of Agriculture, Fishing, etc.) and the National CountrySTAT Secretariat. They meet to discuss and analyze data availability to harmonize and validate it at national level.

Since data come from different sources (censuses, surveys, administrative records, etc.), they are sometimes contradictory, inconsistent and make the data unreliable. The Technical Working Group should decide and validate the representative data, based on social, cultural and national economy. The final result is to get official data uniquely through a national consensus.

This kind of this workshop should be on regular basis. In addition, it could have a variable duration due to the importance of these activities that the National Technical Working Group needs to achieve a single-depth analysis of agricultural economic activities.

The following description of work done by the "Technical Working Group," by Mr. Alex Wambua, senior statistician of the Department of Agriculture in Kenya:

«Of note, is that, the Technical Working Group (TWG) in the country is very keen on the data posted into the site. During the TWGs meetings most of the work involves validation and harmonization of the different sources due to the diverse nature of the agriculture sector in the country.

The TWG is composed of representation from ALL Agriculture Data producers and user, and it is in the forum that some of the data sets are prone to change and a lot of validation.

The National Bureau of Statistics (KNBS), the custodian of official statistics takes a key role and due to the seriousness of the meeting even the directors of Production chairs the meeting....”

It is important that the national institutions and agencies, in charge in statistics production of food and agriculture, are really involved, as well as the commitment of the national authorities to support the carrying out of these activities, that is also fundamental for the image of the country's statistical system.

3.7.3 Data Standardization at national level with international standards

These steps involve primarily the CountrySTAT National Secretariat and marginally National Technical Working Group.

Standardization means the adoption of international rules in order to make comparable data at international level.

The variables to be standardized are the time, product and geographical area.

The units of measurement are expressed in international units of FAO.

1. Normalization of local products (aggregation of local products to main products)

The Correspondence Table establishes the relationship between national and international classifications. This correspondence is based primarily on analysis of agro-biological characteristics or economical of statistics of local product and the association of these detailed local products with the FAO international classification that includes grouped main products as the following example:

Sub-National data		Core data	
Production quantity of primary crops by local product (tonnes)		Production quantity of primary crops (tonnes)	
Product	Quantity	Product	Quantity
White Maize	25000+	Maize	40000
Yellow Maize	15000=		
Maize	40000		

7. Table of standardization of local products

2. Geographical Standardization (aggregation of national several administrative levels to national level)

The CountrySTAT framework uses the GAUL system (Global Administrative Unit Layers).

The implementation of the GAUL system is used to compile and disseminate recent territorial information on administrative units for all countries in the world.

The objectives of this system are:

- a) to overcome the fragmentation of the global dataset and manage the disputed areas;
- b) to reduce maintenance efforts applying a unified coding;
- c) to create a reference for current and past admin units;

The GAUL contributes to the standardization of spatial data sets representing administrative units, see the examples below:

Sub- National data						Core data			
Production Quantity of primary crops (tonnes) by product, region and year						Production Quantity of primary crops (tonnes)			
Year				2004	2005	Year		2004	2005
Product	Product	Region	Region			Product	Product		
56	Maize	1926	Bamako	2099	8309	56	Maize	314024	620910
		1927	Gao	0	36				
		1928	Kayes	23551	63099				
		1929	Kidal	0	0				
		1930	Koulikoro	52959	123574				
		1931	Mopti	1077	..				
		1932	Segou	31968	32521				
		1933	Sikasso	202370	393371				
		1934	Tombouctou	0	0				
		155	Total Country	314024	620910				

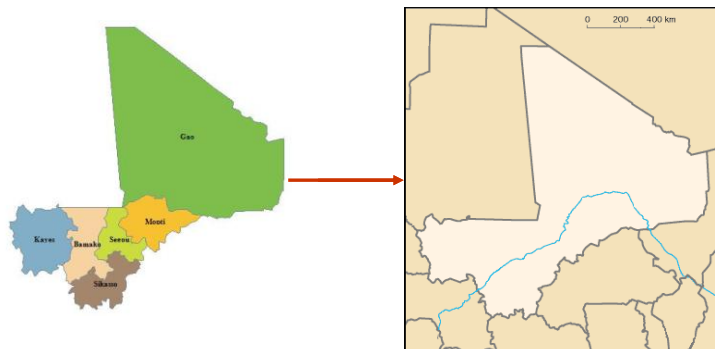
GAUL codes

8. Table of Geographical Standardization

The input codes enable the dynamic representation of cartogram on the website.

Regional administrative level

Country level



9. Picture of Mali cartogram

3. Standardization of measurement units with international units

To make enable data comparison in the Core, a single measurement unit has been established. In the CountrySTAT framework, the “tonne” is the conventional adopted unit and all weight sizes must then be expressed in this unit for the CORE For the local statistics it is possible to retain the local weight of the universal metric system (for example: litres, etc.).

- Weight (conversion factors to the tonne)

Weight

1 kilogramme = 2.20462 pounds	1 pound = 0.45359 MT
1 metric tonne (MT) = 0.98421 long ton	1 long ton = 1.01605 MT
1 metric tonne (MT) = 1.10231 short ton	1 short ton = 0.90718 MT
1 metric tonne (MT) = 1000 kilogrammes	1 kilogramme = 0.001 MT
1 metric quintal = 100 kilogrammes	1 metric quintal = 0.1 MT
1 metric tonne (MT) = 19.684 cwt (112 pounds)	1 cwt (112 pounds) = 0.0508 MT UK and British territories
1 metric tonne (MT) = 22.046 cwt (110 pounds)	1 cwt (110 pounds) = 0.04536 MT Canada, Honduras, USA
1 metric tonne (MT) = 66.667 metric arrobas	1 metric arrobas = 0.015 MT Brazil
1 metric tonne (MT) = 21.739 Spanish quintals	1 Spanish quintal = 0.046 MT Chile, Costa Rica, El Salvador, Guatemala, Philippines, Spain, Venezuela
1 metric tonne (MT) = 21.735 Spanish quintals	1 Spanish quintal = 0.04601 MT Cuba, Peru
1 metric tonne (MT) = 20 metric kantars	1 metric kantar = 0.05 MT Egypt
1 metric tonne (MT) = 22.258 kantars	1 kantar = 0.04493 MT Egypt, Sudan
1 metric tonne (MT) = 26.792 maunds	1 maund (82.286 lb) = 0.03732 MT India, Pakistan
1 metric tonne (MT) = 266.67 kwan	1 kwan = 0.00375 MT Japan, Republic of Korea
1 metric tonne (MT) = 16.667 piculs (pikuls)	1 picul (pikul) = 0.06 MT Cambodia, Lao PDR, Thailand
1 metric tonne (MT) = 16.534 piculs (pikuls)	1 picul (pikul) = 0.06048 MT Brunei, Malaysia

Example:

To convert 1 liter of cow milk in tonne it necessary to do the following steps:

- convert in kg: multiply 1 liter of cow milk by specific weight of cow milk (1.03) = 1.03 kg
- calculate the tonne: divide by 1000= 0.00103 tonnes

- Currency

Official currency used in the FAO is the U.S. dollar, but it is possible to express the unity in the local currency and provide the exchange rate in U.S. dollars.

4. Standardization of time

To facilitate the comparison the time series are expressed in "calendar year" (January 1-December 31).

For crops whose harvest extends over the following year, production will be allocated to the calendar year in which the bulk of the harvest took place. The livestock numbers are indicated for the year ending September 30 (and the animals counted in a given country at any time between October 1 and September 30 next year will be considered for the latter).

The standard tables and metadata are uploaded into CountrySTAT international framework.

3.8 Data quality

In the past, the quality of the data was evaluated only in terms of accuracy, and therefore in terms of the discrepancy between the true value of the statistical survey and the available value (measured value).

Today, the statistical quality is understood in terms of the capacity to meet the users' needs with regard to statistical information. According to ISO 8402-1986 (International Organization for Standardization) the proposed definition of quality is "the totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs".

Applying this definition to the statistical information, it highlights the following important points:

- The quality information user is the client to whom the product or service is addressed.
- The quality must have specific characteristics.

These specific dimensions / characteristics are reported in data quality assessment common with **Eurostat, IMF, African Union Commission** to define the output quality of statistics of official international Organizations.

The example reported below refers to an approach in addressing the quality aspects using as starting point the user and how he/she sees the product. This is a summary of a combination of user key questions related to the quality dimensions to address the improvement of data quality at international level.

Key Questions	Dimensions
Are the data what the user expects?	Relevance and Completeness
Is the figure "reliable"?	Accuracy
Are the data in all necessary respects comparable across Countries ?	Comparability across the countries
Are the data coherent with other data?	Coherence
Does the user get the data in time and according to pre-established dates?	Timeliness and punctuality
Is the figure easily accessible and understandable?	Accessibility and clarity

10. Summary of data quality requirements for dissemination

The meanings of each dimension are as follows:

Relevance (and Completeness): Relevance is the degree to which statistics meet current and potential users' needs. It refers to whether all statistics that are needed are produced and the extent to which concepts used (definitions, classifications etc.) reflect user needs. Completeness is the extent to which all statistics that are needed are available. It is usually described as a measure of the amount of available data from a statistical system compared to the amount that was expected to be obtained.

Accuracy (and reliability): Accuracy in the general statistical sense denotes the closeness of computations or estimates to the exact or true values. Reliability is the statistical value of this relative difference, expressed in terms of probability of being correct.

Comparability across the countries: It is the possibility to compare over time and space statistics on the phenomenon of interest. The degree of comparability is influenced not only by conceptual changes that may occur over time and space, also from changes in definitions and / or operational characteristics taken from the production process information. It is obviously on the control of the latter that the focus must be to maximize the comparability of the information.

Coherence: Coherence of statistics is their adequacy to be reliably combined in different ways and for various uses. It is, however, generally easier to show cases of incoherence than to prove coherence. When originating from a single source, statistics are normally coherent in the sense that elementary results derived from the concerned survey can be reliably combined in numerous ways to produce more complex results. When originating from different sources, and in particular from statistical surveys of different nature and/or frequencies, statistics may not be completely coherent in the sense that they may be based on different approaches, classifications and methodological standards. Conveying neighboring results, they may also convey messages that are not completely coherent, the possible effects of which users should be clearly informed.

Timeliness and punctuality Timeliness of information reflects the length of time between its availability and the event or phenomenon it describes. Punctuality refers to the time lag existing between the actual delivery date of data and the target date when it should have been delivered, for instance, with reference to dates announced in some official release calendar, laid down by Regulations or previously agreed among partners. It is necessary to adopt a statistical agenda. It is also necessary that each country or region adopts a regional and national agenda for the provision of official statistics.

Accessibility and clarity Accessibility refers to the physical conditions in which users can obtain data: where to go, how to order, delivery time, clear pricing policy, convenient marketing conditions (copyright, etc.), availability of micro or macro data, various formats (paper, files, CD-ROM, Internet...), etc.

Clarity refers to the data information environment whether data is accompanied by appropriate metadata. Illustrations such as graphs/maps and information on their quality has to be made available (including limitation in use...). Moreover, it would be necessary for the to national data service producers to provide additional assistance to the users.

3.8.1 The approach to support data quality improvement in the CountrySTAT framework

In the CountrySTAT framework, the approach aims to support countries to get them to work towards a data quality improvement with regard to both the quality dimensions (described above) and international experiences. They address questions through a framework which progresses from the abstract/general to more concrete/specific detail.

The organization of the CountrySTAT system provides the countries with the means to revise their own previously published data (to be coherent and consistent), by means of an IT tool. The objective is to revise the existing data to respond to quality conditions and to influence the process of national data structures. It allows the review of statistical methods and devices for data collection, as well as methods and treatment techniques that are used to develop the national statistics.

For this purpose, the following approaches have been adopted:

- To respond to the **relevance** dimension that refers to the ability of data to meet current and potential user needs, both nationally and internationally, a basic primary data-set (CORE) has been defined to elaborate the Food Balance Sheets (FBS) and analytical indicators to get the Food Security Statistics. Collaboration with international institutions and partners includes the collection and dissemination of relevant indicators for policy making. Moreover, a complete review of the national statistical system with the preparation of a periodical report. It is an overview of the institutional, legal, technical and operative description of national statistics dissemination on agriculture and food. It allows each country to follow the developments in its own data through the use of CountrySTAT.
- To respond to the **accuracy** dimension, periodically national technical meetings and working sessions (TWG and National technical Secretariat) for each country at national level are organized to harmonize and validate national data (data source assessment, etc.). They are made up of the main national institutions.
- To respond to the comparability dimension, the adoption and adaptation of the international standards (FAO commodities classification, concepts and definitions) with the national classifications are progressively analyzed and revised (with the correspondence table) to make data comparable. This work is carried out during the sessions of the TWG and the National Technical Secretariat (NTS)
- To respond to the **coherence** dimension, the review and systematic analysis of data is performed by the National Technical Secretariat, by the Regional Technical Team and by CountrySTAT FAO HQ. The analysis of the coherence is related to the following activities:
 - Analysis of data time series inconsistency
 - Analysis of cross-check data domains in the same module (both, Core and Sub national modules) analysis
 - Analysis of data discrepancies between CORE (aggregated data) and Sub national (disaggregated data) modules.
 - Analysis on missing data, not available and its handling.

To allow the TWG to analyze and support any eventual identified issues, the Technical Secretariat, the CountrySTAT FAO HQ team and the Regional Technical Team should prepare data quality analysis reports based on discussion with the country .

- To respond to the **timeliness** and **punctuality** dimensions, time-lag between data collection and dissemination time is requested for each data source (national agricultural surveys, censuses, etc.). It is also required to plan a data dissemination calendar and data cycles to be published on the web, in order to inform the user on expected availability of data.
- To respond to the **accessibility and clarity** dimension, the structure is organized for an easy accessibility to the national micro-data, macro-data and metadata via Internet, in order to facilitate the user in a rapid research of all national agricultural statistics. The reference of international standard adopting in table's editing increases the content comprehension for an easier data comparison.

A detailed metadata section has been created to archive all relevant information on the origin of the data and eventual analysis on data reconciliation at international level (see the chapter on Metadata).

The direct assistance to National CountrySTAT Secretariat helps the exchange information (local and international) in developing a fruitful technical collaboration between countries.

Dimensions	Elements	CountrySTAT Outputs
Relevance and Completeness	<ul style="list-style-type: none"> • Legal and institutional environment • Resources • Professionalism • Transparency • Ethical standards 	<ul style="list-style-type: none"> • National Panorama Report
	<ul style="list-style-type: none"> • Data user request 	<ul style="list-style-type: none"> • Primary Data collection to elaborate SUA/FBS and Food Security Statistics • National Agricultural Censuses and Surveys data • Aggregate data at Regional level • Collaboration with International partners such as MAFAP, Africanfertilizers, WFP, etc.
Accuracy	<ul style="list-style-type: none"> • Data Source • Assessment of data source • Statistical techniques • Assessment and validation of intermediate data and statistical outputs • Revision studies 	<ul style="list-style-type: none"> • National Technical Working Groups to harmonize, validate and standardize national data coming different sources.
Comparability across the countries	<ul style="list-style-type: none"> • Concepts and definitions • Scope • Classification 	<ul style="list-style-type: none"> • International FAO commodities Concepts, definitions and Classifications (FAOSTAT methodology) • National Classifications • Correspondence tables between national and international classifications • International geographical codes and concepts (FAOSTAT at national level and GAUL system at sub-national level)
Coherence	<ul style="list-style-type: none"> • Coherence includes the concept of Consistency as the Coherence covers four levels: intra-annual and annual statistics, over time, between different statistical 	<ul style="list-style-type: none"> • Systematic analysis on time series consistency • Systematic analysis on discrepancy between CORE (international standard) and sub-national modules • Correspondence tables between national and international classifications
Timeliness and punctuality	<ul style="list-style-type: none"> • Timeliness and punctuality 	<ul style="list-style-type: none"> • Provided information in the CountrySTAT Metadata section for each source
Accessibility and clarity	<ul style="list-style-type: none"> • Data Accessibility • Metadata accessibility • Assistance to users 	<ul style="list-style-type: none"> • Easy access to national agricultural data as CountrySTAT is one stop center • Metadata dissemination • Close collaboration with national Secretariat

11. Summary of Quality dimensions and CountrySTAT outputs

3.8.2 Missing data, Not available, Not applicable and Zero

By adhering to the principle of quality and for the dissemination by international standards, countries should commit to the respect of standards for data processing.

Also, the data quality of the country will depend on how the TWG will improve the data according to the rules and standards of publication.

Among many other rules, it is necessary to show the issue of data according to their nature: missing, not applicable, not available, etc are very important.

The symbols group mainly used by CountrySTAT system is as follows:

- *Category not applicable* = “W” Data for these categories do not even hypothetically exist and/or data included in another category
- *Data not available* = “M” Missing data (data exist but were not collected)
- *Not for publication* = “K” Confidential data
- *Nil* = “Z” absolute zero (data is equal to zero)
- *Estimated value* = “E”=
- *Provisional or preliminary figure* = “P”
- *Less than 0.5 of unit employed* = “N” Insignificant data

Definition of Series break ([OECD glossary](#))

Definition: Breaks in statistical time series occur when there is a change in the standards for defining and observing a variable over time. Such changes may be the result of a single change or the combination of multiple changes at any one point in time of observation of the variable.

Context: The specific causes of breaks in a statistical time series include changes in classifications adopted and definitions of the variable, coverage, etc.

Statistical agencies and users of time series data for economic research to analyze and interpret economic and social events and conditions attach very high importance to the continuity and consistency of data over time. However, it should be emphasized that the occurrence of time series break may not necessarily jeopardize the reliability of a time series. Statistical agencies frequently apply a number of techniques to ensure the continuity of a time series.

Finally, the impact of a time series break is often a matter of judgment on the part of the user and depends on the use(s) to which the data are put.

3.8.3 Metadata of agricultural statistics

The definition of an adequate framework of metadata to improve information on the data is a central question that the international institutions are concerned about. This issue is regularly discussed at international meetings of statistics activity coordination. In particular during the July 2008 session, with regard to agricultural statistics, the Committee for the Coordination of Statistical Activities established that FAO metadata framework could be an appropriate template for national agricultural statistics.

Further to the metadata that accompanies each data item, the gathering of all the documentation and information on statistical activities in the country was requested as follows:

- To collect statistical data and primary sources such as surveys, censuses and administrative records;
- To establish the main categories of agricultural activities and statistical indicators from the framework of each country to provide a more complete picture.

This work is the basis of the metadata construction and it is more than just a documentation exercise.

In fact, the countries that have started to work on this activity, in the CountrySTAT framework, have shown that the use of this system of analysis and data verification, together with their sources (developed consistently and correctly), actually serve as a means to improve the agriculture and food statistical system in the country.

The metadata analysis exercise provides an opportunity for all stakeholders in the statistical system to track, understand and evaluate national data. In addition, it is also useful for data producers to improve its tools and methods. In this way, it is therefore possible to reinforce the national agricultural statistics system.

By the same token, the exchange of metadata between countries is also a process to share and exchange positive experiences in terms of national system of agricultural statistics, major agricultural domains and indicators, as well as data collection and survey and census methodology.

CountrySTAT covers a growing number of countries, and the meetings at regional and international level are also further opportunities for sharing knowledge and experiences between countries.

To successfully implement the initiative of establishing metadata for national agricultural statistics, it requires joint efforts by all concerned parties. Lessons learned from the practice are that in order to produce a good quality metadata, it is not sufficient to merely have a framework, it is also important to have a process and mechanism to provide feedbacks to countries and check if the country report has covered the needed information.

The following description is the outcome of the Conference on Data Quality for International Organizations.

“Metadata is information on data” and for agricultural statistics the information refer to:

a) National System of Agricultural Statistics

- a.1) Legal framework and statistical advisory bodies
- a.2) Structure and organization of major agricultural statistical agencies
- a.3) Outputs and dissemination of agricultural statistics
- a.4) Dialogue with data users and co-operation with international organizations
- a.5) Strategic framework

b) Agricultural Statistics Data

b.1) Major Domains and Selected Indicators of Agricultural Statistics

- b.1.1) Concepts, definitions and classifications
- b.1.2) Coverage, availability, data sources and responsible agencies
- b.1.3) Data processing, estimation and revision methodology
- b.1.4) Other reference information

b.2) Major Data Sources for Agricultural Statistics

b.2.1) Census (e.g., census of agriculture)

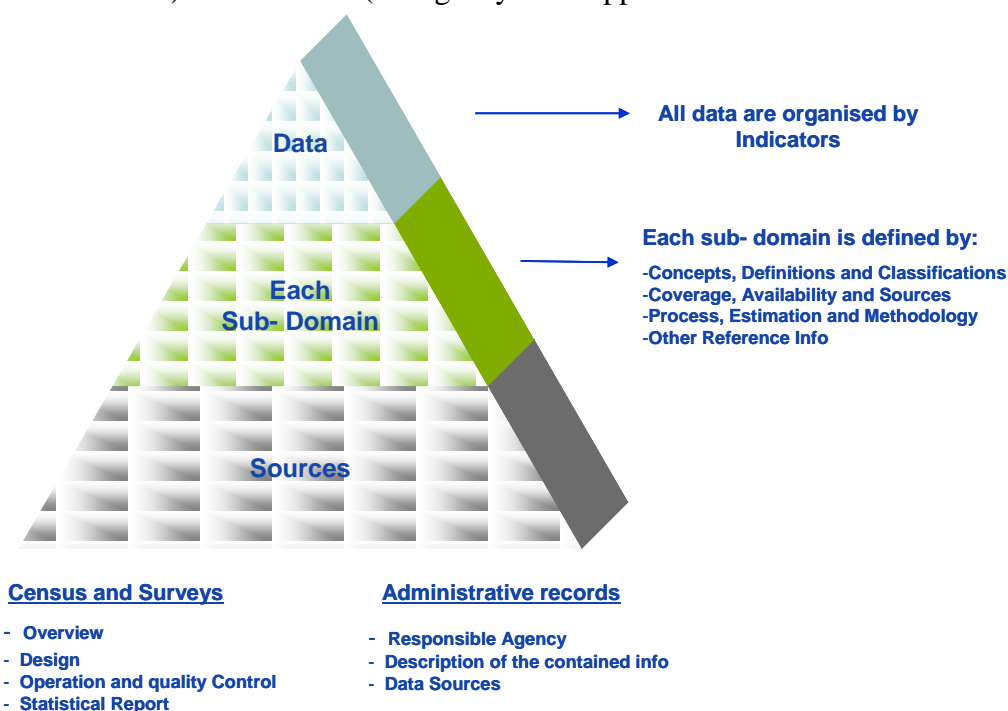
- b.2.1.1) Overview
- b.2.1.2) Census design
- b.2.1.3) Conduct, operations and data quality control
- b.2.1.4) Statistical Report

b.2.2) Surveys (e.g., Rice and corn production survey)

- b.2.2.1) Overview
- b.2.2.2) Survey design
- b.2.2.3) Conduct, operations and quality control data
- b.2.2.4) Statistical Report

b.2.3) Administrative Records (e.g., measurements done by cadastral offices to establish cadastral maps, or records of prices at wholesale markets, of imports and exports, or livestock slaughtered at slaughterhouses, etc.)

- b.2.3.1) Responsible Agency (the official who provides the administrative record)
- b.2.3.2) Description of the contained information (e.g., items and area covered, method of preparation)
- b.2.3.3) Data source (the agency that supplies the information)



12. Picture on hierarchical data and metadata structure

3.8.4 Statistical metadata framework of CountrySTAT

The structure of metadata has been organized to be automated in the CountrySTAT system.

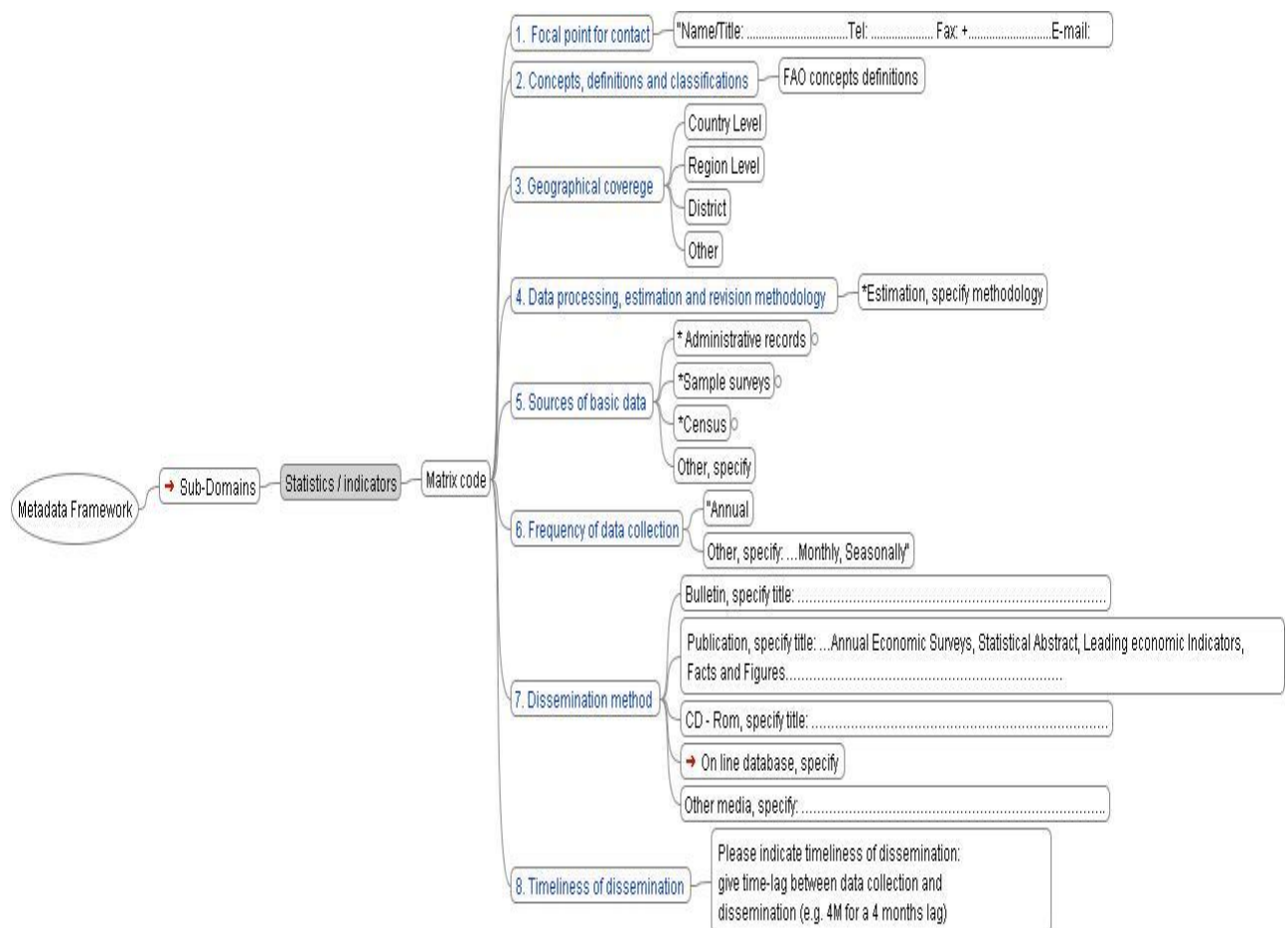
The hierarchical structure of metadata has to be completed by the national Secretariat, reflecting the information harvested and revised by TWG.

Metadata, which refer to the National System of Agricultural Statistics are not included in this structure as they have already been provided in the national Panorama Report I prepared by the countries.

Table 13 below shows the hierarchical structure of metadata for Agricultural Statistics data, which contains information for each indicator.

Table 14 describes the domains tree and all indicators included in the framework of statistical metadata CountrySTAT.

For each indicator a matrix code is associated to uniquely identify a table-indicator. This technical shrewdness guarantees structure homogeneity among countries and thus the tables and metadata comparability.



13. Picture of the CountrySTAT hierarchical framework structure metadata

3.8.5 Description of each Metadata section and final output

- **Focal Point for contact**
Insert the name of the person who provided data, with address and e-mail address, or the national CountrySTAT coordinator
- **Concepts, definitions et classifications**
Insert the reference “Concepts, definitions et classifications” that defines the indicator.
For Standard Core Indicators, it is necessary to use FAO “Concepts, definitions et classifications” document that is available on CountrySTAT “Metadata section”- International Standard Concepts and Definitions
For further indicator like “Yield”, it is necessary to mention the methodology adopted if any.
- **Geographical coverage**
Indicate all geographical level for which data is available
- **Data processing, estimation and data revision**
Provide a short description on how data is archived and how data is processed in order to retrieve or transform or classify information.
Describe the methodology on how to aggregate data from national local level to requested standards. For example for the following products Paw Paw and Tamarind:

Indicator	FAO classification	Local classification	Aggregation method
Production quantity	Fruit fresh nes	Paw Paw	Sum the quantity
		Tamarind	
Producer’s prices	Fruit fresh nes	Paw Paw	Prices weighted average or Prices simple average
		Tamarind	

- **Sources**
For the presentation of metadata, the information has to be sufficiently comprehensive according to the following data source:
 - Statistics from administrative sources
 - Statistics of current surveys and censuses
- For the **Administrative records**
The Administrative Records are information produced by administrative offices that manage the requested data, for example Foreign Trade statistics (see a best practice of [CountrySTAT Philippines](#)) and measurements done by cadastral offices to establish cadastral maps, or records of prices at wholesale markets, of imports (CIF) and exports (FOB), or livestock slaughtered at slaughterhouses, etc.

Provide the following information:

- Responsible Agency (the official who provides the administrative record)
- Description of the contained information (e.g., items and area covered, method of preparation)
- Data source (the agency that supplies the information)

- **Current Surveys** (e.g., Rice and corn production survey) **and Census** (e.g., census of agriculture)

Provide the following information:

- o Overview
- o Survey design
- o Conduct, operations and quality control data
- o Statistical Report (it is very important to link the final report if available or the official publication)

- **Frequency of data collection**

Provide the frequency of data collection/compilation (Annual, Monthly, weekly, etc.)

- **Dissemination method**

Provide how the data is disseminated (Bulletin, Publication, CD Rom, On-line and indicate the reference)

- **Timeliness and punctuality**

Timeless is "Periodicity follows dissemination standards" and "Punctuality" is the respect of scheduled time of effective publication.

Provide time-lag between data collection and dissemination (e.g. 4M for a 4 months lag).

Below is an example of published data documentation

The following diagram shows the final result of data dissemination between Core and Sub-national data with the support of metadata.

Production Quantity of Primary Crops by Administrative level 1, local product and Year

Year	Code	Region	56 Maize
2006	51325	Central	134030
	51326	Coast	57803
	51327	Eastern	357644
	51328	Nairobi	1758
	51329	North East	875
	51330	Nyanza	476159
	51331	Rift Valley	1682261
	51332	Western	537248
		TOTAL	3247778

Production quantity of Primary Crops by Product and Year

Year	15 Wheat	27 Rice	56 Maize	83 Sorghum
2006	358061	64840	3247777	131188

Maize production which is the country's maize staple food item, increased marginally by 3.2 per cent to record a total of 27.1 million bags in 2009 from an area of 1.9 million ha slightly higher than the 26.3 million bags from 1.8 million ha in 2008. Better volumes were occasioned by access to subsidized fertilizers, improved utilization of certified seeds and generally good and well spread rains especially in highlands East of Rift valley. Yields per ha however remain low at about 14.4 bags per ha. Again production volumes still remain well below the projected consumption level of 36.0 million bags in 2009 thus necessitating imports to cover the deficit. The highest production was last recorded for 2006 at 36.1 million bags as Table 5.2 demonstrates.

Table 5 2: Maize Production 2005-2009

Year	2005	2006	2007	2008	2009*
Area (ha)	1,760,618	1,888,185	1,615,304	1,793,757	1,885,071
Production					
90 kgs bags	32,423,963	36,086,406	32,542,143	26,302,219	27,142,475
Tons	2,918,157	3,247,777	2,928,793	2,369,569	2,442,823
Unit price per bag (Kshs)	1,363.0	1,300.0	1,200.0	2,500.0	2,614.0
Average Yield (bags/ha)	18.0	19.0	20.1	14.7	14.4
Consumption (90 bags)	32,120,000	33,105,000	34,098,150	36,000,000	36,000,000
Exports (tons.)	-	-	-	-	-
Import (tons.)	49,621.0	-	-	-	-
Total Value (billion Kshs)	44.2	46.9	52.3	65.8	71.0

Source: Directorate of Crops

3.9 The dynamic process between CountrySTAT champions

The main champions and their activities in the project.

The national focal institution chosen for the implementation of CountrySTAT system is responsible for its implementation, operation, coordination of national activities and system security in the country..

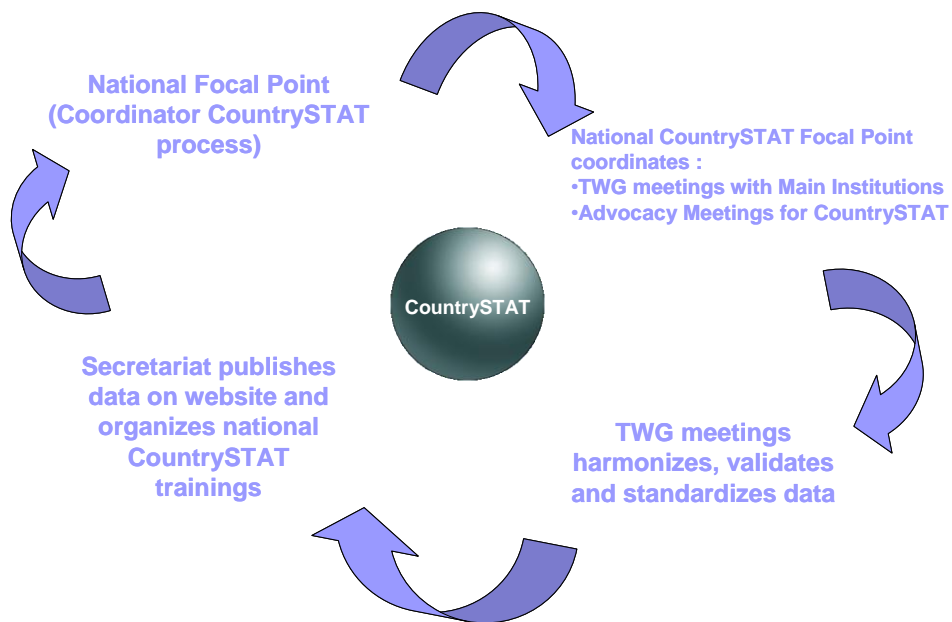
The CountrySTAT National Coordinator meets with the National Technical Working Group on a bimonthly basis to share with all structures involved, information on the progress of the project and gather recommendations on the organization of work and resource mobilization.. The CountrySTAT National Coordinator works in close collaboration with the Regional Organizations and the CountrySTAT Team at FAO headquarters.

In terms of technical support, the National CountrySTAT Secretariat benefits from advice from FAO staff and specialized consultants to facilitate the implementation of the activities.

The Technical Working Group should meet on a bi-monthly basis to discuss and decide on issues of statistical quality control (data and metadata, completeness and correctness), CountrySTAT contents, methodology and standards, cross-domain collaboration, as well as all technical, administrative and practical issues of inter-agency and inter-institutional relevance.

The collaboration between all institutions and national organizations is fundamental to guarantee the process carrying out. It is necessary a very good organization of the National Coordination and National Secretariat for its success.

Dinamic CountrySTAT national capacity building process



The entities constituting the CountrySTAT interact continuously. The process in which they participate is dynamic; they should negotiate with other institutions based on project needs and therefore develop national statistical capacity, make decisions of published national statistics at the time and for the future.

Cooperation with the CountrySTAT team of FAO does not only support the project in its startup, but it contributes to an ongoing synergic collaboration of the project development with continuing adaptations and enrichments depending on future evolution.

The Focal Point is the essential link between the national and international statistical environments. He coordinates the project in the country and manages the technical working groups and also to activate the process of awareness and promotion of statistical activities in the project.

It manages the activities of the Secretariat to finalize data publication and identify needs to organize refresher technical training (statistics and IT) among national organizations and institutions involved in project activities.

The Secretariat and the Focal Point remain in contact for both administrative and technical procedures of CountrySTAT of FAO.

3.10 Data Dissemination on the website

The dissemination of data on the website is a relatively new and is a means of communication which gives access to the international level and enables a wider communication.

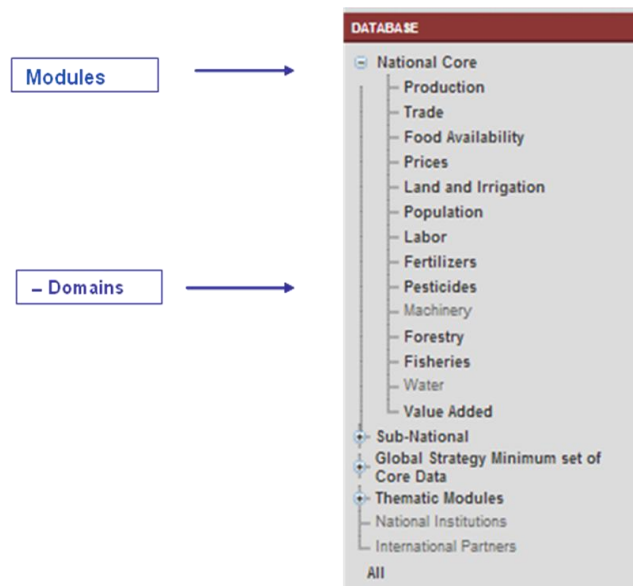
The website is open to people all over the world, access to information is simple and immediate, and data dissemination facilitates decision-making.

However, simple and very important rules must be taken into consideration. All information on the site must be:

- Relevant
- Concept
- Simple
- Consistent

with the objective to organize data as a statistical database (hierarchical structure) to optimize the value of information.

The statistics are organized as follows:



14. Picture of the Navigation tree

The basic unit is the table that can contain one or more indicators.

The statistical indicator may include the following:

- Basic indicator
- Disaggregated variables
- Time variable(s)

3.10.1 The basic structure (titles, variables and descriptions)

A database is a collection of data stored according to a schema and manipulated according to the rules set out in one Data Modeling Facility. (ISO/IEC 10032).

A variable is the observed feature of a unit that may assume more than one set of values to which a numerical measure or a category from a classification can be assigned (e.g. income, age, weight, etc. and 'occupation', 'industry', 'disease' etc).

(CODED)

A statistical indicator is a data element that represents statistical data for a specified time, place, and other characteristics. (CODED)

An observation is the value, at a particular period, of a particular variable. (CODED)

In the statistics field, a statistical database is a database containing statistics.

Statistics are divided into subject areas or domains.

To describe a statistical table the description of the statistical indicator has to be divided into components. There is no common generic model of a statistical indicator. Each statistical office has their own. For those who are responsible for database tables, understanding the description of a statistical table is necessary. There is the need for end-users and for subject matter specialists to understand a detailed description of a statistical indicator and statistical table.

The requirements for database tables for statisticians should be described in a more understandable way.

The statistical indicator can be divided into components: basic indicator, classification variables, time variable(s).

Example of the statistical indicator components:

Production quantity (tonnes) of primary crops	→ <i>Basic Indicator</i>
by product	→ <i>Classification Variables</i>
by year	→ <i>Time Variable</i>

Also several other components describe a statistical indicator, for example measurement unit, phenomenon described by indicator, statistical unit, etc.

Usually a statistical indicator is expressed using specified characteristics called variables. For example, Unemployment rate by sex and age group. Sex and age group are classification variables. The values of the variable sex are males and females. The values of the variable age group are for example 15-24, 25-44, etc. The component unemployment rate is a basic indicator. Basic indicators describe the main characteristics of a socio-economic phenomenon or process, sometimes called domain of interest. A statistical indicator always refers to a certain time period. For this purpose a time variable is used.

3.10.2 Statistical Table

The database sets special requirements to the table. The table itself has to be created following specific needs. The database allows you to present complex cross-sectional tables.

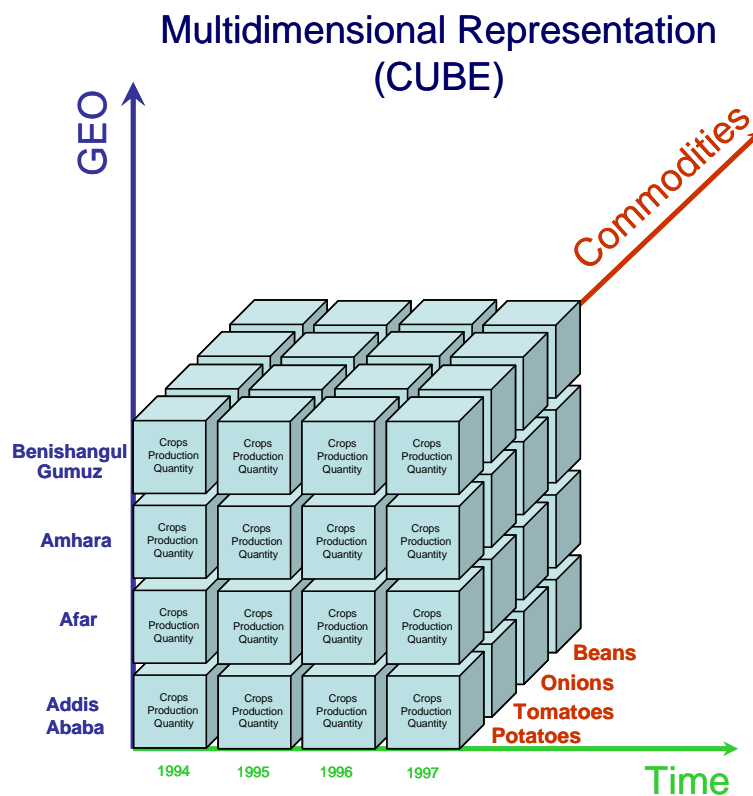
A statistical table is a multidimensional matrix, so called cube; also cross-sectional table has been used.

Each single dimension of a matrix determines one variable. When the table presents data for more than one time period, one dimension determines time variable. There could be some cases with one or two time variables in the table (e.g. year and month with

corresponding values 2000, 2001, 2002, etc. and January, February, March, etc.). In alternative it is possible to use only one time variable (e.g. variable time with values 200601, 200602, 200603, etc.).

A statistical table contains values of a statistical indicator. One or more indicators can be shown on the table. In the case of more than one indicator on the table, one dimension/variable determines basic indicators. Sometimes this variable is called observations.

Each combination of values of variables determines one data cell in the table. The number of values of variables determines the number of data cells in the table. In the case of three variables with “*l*”, “*m*” and “*n*” values, the number of data cells in the table is $l \times m \times n$. In Figure 17 each cell (the value of Production quantity of crops) is determined by a certain combination of values of variables geography, commodity, and time.



15. IT representation of a Multidimensional Matrix (cube)

Multidimensional Data on flat file

Crops Production Quantity by First ADM Level, Local Commodity and Year		1994	1995	1996	1997	1998
Addis Ababa	Potatoes	1.569	2.908	4.359	4.619	2.654
	Tomatoes	1.86	3.29	4.084	4.858	3.171
	Onions	2.501	2.271	3.66	4.655	4.601
Afar	Beans	0.233	0.172	0.228	0.19	0.402
	Potatoes	8.332	13.103	23.08	23.731	13.701
	Tomatoes	8.578	15.145	21.425	26.622	12.634
Amhara	Onions	13.678	13.454	16.366	25.423	19.221
	Beans	1.07	0.956	1.20	1.373	1.58
	Potatoes	17.173	26.185	45.81	48.238	28.882
Benshangul	Tomatoes	19.155	27.171	43.02	46.238	28.882
	Onions	25.512	22.554	37.054	44.005	36.684
	Beans	2.055	1.906	1.926	2.496	3.131
Benshangul	Potatoes	7.172	12.404	20.278	20.863	10.043
	Tomatoes	6.042	11.008	15.173	20.933	9.71
	Onions	10.107	9.946	14.918	15.386	14.394
	Beans	0.853	0.832	0.759	1.057	1.346

16. Table multidimensional flat file in Excel format

The Table in Figure 18 is a simple web example, containing one statistical indicator. In the case of one indicator the title of the table begins with the label of the basic indicator, followed after by, by the labels of classification and time variables. The order of variables after by in the title is determined by the order of the variables in the table, the labels of variables in rows come first and then in columns. Each table has its unique name, which characterizes the content of the statistical indicators located in the table.

CountrySTAT GHANA

Production quantity of Primary Crops by Year, Crop (tonnes)

Value	2008	2009	2010	2011
Maize	1,470,075.34	1,619,589.60	1,511,695.00	1,683,983.80
Millet	433,834.92	245,550.43	218,955.00	183,921.95
Rice, paddy	301,921.45	391,439.59		
Sorghum	330,949.85	350,350.00	324,422.00	287,068.61

17. Publication of a multidimensional array

In Table 19, an indicator (e.g.: Area harvested and Production quantity of primary crops) can be described by basic indicators which become observation variables

Basic Indicators **Classification Variables** **Observation Variables** **Time Variable**

Database

- National Core
 - Sub-national
 - .Production
 - .Trade
 - .Food Availability
 - .Prices
 - .Land and Irrigation
 - .Population
 - .Labor
 - .Fertilizers
 - .Pesticides
 - .Machinery
 - .Forestry
 - .Fisheries
 - .Water
 - .Value Added
- Thematic Module
 - .National Institutions
 - International Partners
 - Other data
 - Protected Working Files
 - All tables

Variables and values

Area harvested and Production quantity of primary crops by product, indicator and year

	Area	Production
Maize		
2004/05	1 392 916.00	23 941 622.00
2005/06	1 526 124.75	33 367 951.92
2006/07	1 644 521.55	37 764 397.06
Sorghum		
2004/05	1 283 620.00	17 159 543.00
2005/06	1 468 070.37	21 735 986.82
2006/07		23 160 409.33
Rice		
2004/05
2005/06	6 241.16	112 443.11
2006/07
Potatoes		
2004/05	51 698.00	5 097 155.00
2005/06	61 812.05	4 499 957.70
2006/07	73 095.40	5 256 568.01

Variable Values

Footnote:
Source: Central Statistics Agency, Ethiopia

Unit:
Hectar and quintal

Matrix:

18. Publication of a more complex multidimensional array including indicators

A complex case describing a financial phenomenon is as follows:

Phenomenon Time variable Classification variable

Database - Subject area - Table - Variables

FINANCIAL DATA OF TRADE ENTERPRISES by Year, Quarter, Economic activity of enterprise and Indicator

	Number of enterprises	Number of persons employed	Number of hours worked, thousand	Net sales, million kroons	..retail sales, million kroons	..wholesale sales, million kroons	..maintenance and repair of motor vehicles, million kroons	Expenses total, million kroons	..purchased and resold goods and services, million kroons	..labour costs, million kroons	..wages and salaries, million kroons	..social security costs, million kroons	Inventories total at the end of quarter, million kroons	..merchand purchased resale at end of quarter, million kroon
2003														
1st quarter														
Economic activities total	40 442	93 363	36 822	28 660	8 414	18 585	321	27 630	22 303	1 770	1 323	447	14 253	13 0
.. Sale, maintenance and repair of motor vehicles, retail sale of automotive fuel	1 220	10 058	4 655	4 981	1 523	3 039	321	4 799	3 952	257	192	65	2 199	2 0
.. sale of motor vehicles and their parts	568	4 895	2 286	3 362	628	2 486	216	3 209	2 672	162	121	41	1 780	1 6
.. maintenance and repair of	476	2 610	1 187	234	51	35	100	214	61	43	32	11	138	1

Observation variable

Values of variables

* Latest update: 15.03.2006

19. Publication of complex table describing a financial phenomenon

The table in Figure 20 contains a number of indicators describing the phenomenon “*Financial data*” of trade enterprises. In this case the title of the table begins with the name of the phenomenon, followed after by the names of variables, including variable of basic indicators. When there are two-three indicators in the table, the list of basic indicators can be also shown in the title of the table. For example, “*Births, deaths and natural increase by sex and region*”.

When there is more than one indicator in the table, one variable (named indicator) determines the list of basic indicators.

When there are indicators with different measurement units in the table, the unit follows the label of the basic indicator. When there is one measurement unit for the whole table, the unit is given under the table, as well as under the section Information, and also on the right bottom (or top) corner of the screen.

3.10.3 Common requirements

In general the relational model for databases is used. The alternative way is to use ready-made tables as separate files, organizing and presenting the tables to the users as the ‘real’ database.

There can be a database of cross-sectional tables (cubes) and a time series database. In the case of a cube structure there is no need for a time series database. The time series can be extracted from the cubes.

Requirements of the statistical database:

- The database has to be divided into subject areas
- It should be possible to search via hierarchical structure of subject areas and also to use text search
- It should be possible to select only necessary data, i.e. only necessary values from each variable
- The selected table should be presented on screen and should be downloadable for further use
- The tables have to be accompanied at least by a minimum set of metadata, including the date of update
- According to the common dissemination policy the database should be free of charge
- Statistics should be presented not only in national language. They should also be understandable at least in English.

Databases serve the purpose of harmonization. Common databases containing data from various subject areas always require a high level of harmonization of metadata.

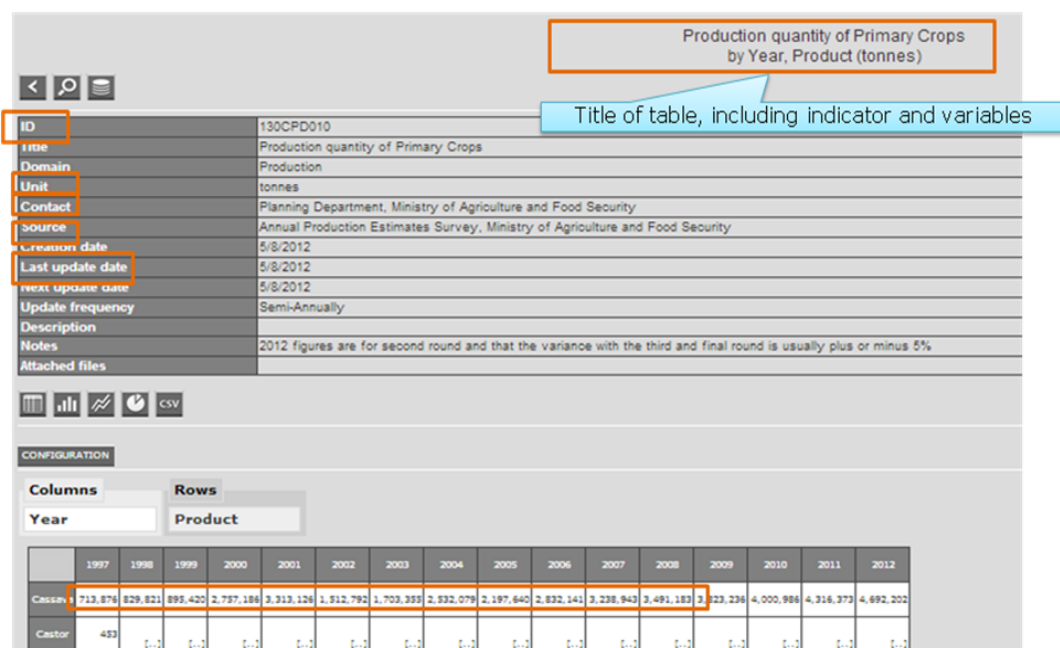
3.10.4 Required metadata

The databases are useful for the purpose of harmonization. The common databases that include information on various topics still require a lot of work to harmonize metadata as following:

- For creation of titles of tables common rules have to be worked out
- The labels of variables and values of variables have to be harmonized over the whole database
- The label of the value of a variable must not be dependent on previous values. In the case of a selection of only one value of the variable it has to be unambiguously/uniquely understandable.
- Each value of the same variable has to be unique. Values for the variable (for example total) must not be repeated.

The user of statistical information needs information to better understand and interpret this information. Statistical data presented on the Internet should always be accompanied by a minimum set of metadata allowing correct interpretation of data:

- Title of table
- Labels of rows and columns in tables
- Definitions of labels
- Measurement unit
- Time reference
- Footnotes highlighting specific precautions
- Source of data (agency compiling the data)
- Explanation of symbols in tables
- Information of copyright
- Date of update
- Contacts for additional information



Production quantity of Primary Crops by Year, Product (tonnes)

Title of table, including indicator and variables

ID	130CPD010												
Title	Production quantity of Primary Crops												
Domain	Production												
Unit	tonnes												
Contact	Planning Department, Ministry of Agriculture and Food Security												
Source	Annual Production Estimates Survey, Ministry of Agriculture and Food Security												
Creation date	5/8/2012												
Last update date	5/8/2012												
Next update date	5/8/2012												
Update frequency	Semi-Annually												
Description													
Notes	2012 figures are for second round and that the variance with the third and final round is usually plus or minus 5%												
Attached files													

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Castor	713,874	829,821	895,420	2,737,189	3,313,126	1,512,792	1,703,333	2,532,079	2,197,640	2,832,141	3,238,943	3,491,183	3,223,236	4,000,986	4,316,373	4,692,202
Castor	433	[-]	[-]	[-]	[-]	[-]	[-]	[-]	[-]	[-]	[-]	[-]	[-]	[-]	[-]	[-]

20. The final published table with the essential information

There are a lot of recommended metadata, which can be presented separately from tables as well as together with statistical tables:

- Statistical population, geographical coverage, observation unit, classifications applied
- Description of methods used in collection, revision, calculation and estimation of the statistics
- Description of quality of data, including information on error sources and accuracy of the statistics
- Comparability with alternative sources, etc.

Focal point for contact	
Yasin tabitays@yahoo.com	Tabit Ahmed
Concepts, definitions and classifications	
Other	tef_commodity%20description.doc
Concepts and definitions adopted at international level are those of FAOSTAT except for the classification of one product: Teff. Teff crop is one of the major staple food crops in Ethiopia and it cannot be classified under any other cereal crop. It should stand alone as one of major cereal grain crop when it comes to Ethiopia. The price of teff has been collected and reported in three varieties, (i.e. white, mixed and brown) since they have significantly different prices in the market.	
Geographical coverage	
Country	
<ul style="list-style-type: none"> • Administrative Lev 1 • Region 	
Surveys	
Annual Agricultural Sample Survey	
The CSA has been collecting data on cropland area, production and productivity for about three decades using probability based sample surveys from agricultural households under the umbrella of Rural Integrated Household Survey Program (RIHSP).	
The agriculture statistics data collection on area, production, yield and farm management practice is conducted twice annually in order to capture both seasons agricultural practice of Ethiopia. These are: main season (Meher) and short rain season (Belg) survey.	
Sample Design	
<ul style="list-style-type: none"> • The primary agricultural statistics data are collected from two sources: small holding farmers and commercial farm enterprises. • Farm enterprises are used as sampling units for commercial farm category and agricultural households (holders) are the ultimate sampling units in the case of small holding farmers. • A stratified two-stage cluster sample design has been used to select samples of agricultural households. The agro-ecological zones and administrative divisions of the country is used to form the strata. • Within each stratum the enumeration areas (EAs) are used as primary sampling units (PSUs) and agricultural households are secondary sampling units. • The AgSS data is collected from more than 65,000 households in 2,280 sample areas and from over 1,700 large and medium scale commercial farms. • The survey findings reports are produced for each administrative zones of the regional states and also aggregated at regional and country levels. 	
Data Collection methods	
In Ethiopia, farmers are not able to provide their land size and their product in standard units and it is also difficult to convert from local units to standard units since these local units size are very much vary from area to another.	
Therefore, the CSA uses objective methods to collect data on cropland acreage by applying rope and compass method and hand held GPS for area measurement and crop cutting exercises on sample plots of each crop is also done for crop yield estimation.	
Direct interview method is used for collection of information on crop yield conditions, farm inputs, practices, land use, product utilization, livestock characteristics, etc.	
Contents of AgSS	
The annual agricultural sample survey is comprised of several questionnaires/modules administered to households at several times:	
<ul style="list-style-type: none"> - Crop production forecast survey (cropland area, condition of crop yield, etc.). September - October. - Agricultural practices and general information (fertilizer, pesticides, irrigation, soil conservation, etc. September -October. - Cropland area measurement. October - November. - Livestock survey (number, type, age, purpose, milk, egg, honey, animal, veterinary information). November - Crop cutting exercise (yield). October- January. - Utilization of crop and livestock product (percent used for consumption, sale, stock, etc.): January- February. - Commercial farm survey (area, production, farm management practices, diary and fattening). February - March). - Short rain season (Belg) agriculture survey (area, production, yield, farm input utilization, practice, etc.) April-June. 	
Statistical Reports of Annual Agricultural Sample Surveys	
Based on annual agricultural sample survey, the nine statistical reports have been produced and disseminated annually. They are:	
<ul style="list-style-type: none"> - Crop Production Forecast: November-December - Area and production: April - Farm management practices: May - Land utilization: May - Crop and livestock product utilization: May - Livestock and Livestock characteristics: January-February - Large and Medium scale commercial farms: June-July - Belg season, area and production: August - Belg season, farm management practices: August. 	
These survey findings reports are published in hard (bulletins) and electronic copies.	
An example is the " Agricultural Sample Survey 2007-2008 (2000 E.C.) "	
Reports are also available on the CSA website (http://www.csa.gov.et).	
Frequency of data collection	
<ul style="list-style-type: none"> • Annual 	
Dissemination method	
<ul style="list-style-type: none"> • Bulletins • CD-ROM • Using Micro data management toolkit • WEB • CountrySTAT, ENADA 	

21. Methodological metadata

It is recommended to present metadata in a structured form, not in plain text. Metadata should also be provided with date of update.

Production quantity of Primary Crops by Year, Product (tonnes)

Methodological metadata

Title of table, including indicator and variables

ID	130CPD010	Matrix code
Title	Production quantity	
Domain	Production	Unit of measurement
Unit	tonnes	
Contact	Planning Department, Ministry of Agriculture and Food Security	
Source	Annual Production Estimates Survey, Ministry of Agriculture and Food Security	
Creation date	5/8/2012	
Last update date	5/8/2012	Last update
Next update date	5/8/2012	
Update frequency	Semi-Annually	Source of data (agency compiling the data)
Description		
Notes	2012 figures are for second round and that the variance with the third and final round is usually plus or minus 5%	
Attached files		

Description of variable values

Footnotes highlighting additional information on the data

CONFIGURATION

Columns: Year Rows: Product

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Cassava	713,876	829,821	895,420	2,757,186	3,313,126	1,512,792	1,703,355	2,532,079	2,197,640	2,832,141	3,238,943	3,491,183	3,823,236	4,000,986	4,316,373	4,692,202
Castor	483															

22. The final table with all metadata on the web

Global appendices

Annex A. Matrix codes

As already mentioned a single table-indicator is identified by a matrix code.

Each code includes several components that provide information to the administrator and to facilitate the possible exchange from a platform to another one. The symbols used are shown in an English nomenclature

The components are reported below:

- Country codes = FAOSTAT codes
- Domain = C (Core - Module de base),
- Sub-domains = S (Sub-national –Statistique locales),
 - PD (Production),
 - TR (Trade -Commerce),
 - PO (Population),
 - FA (Food Availability-Disponibilité alimentaire),
 - LA (Labor -Emploi),
 - LI (Land Use -Utilisation de la terre),
 - MA (Machines - Machinery),
 - PE (Pesticides),
 - FE (Fertilizers -Engrais),
 - PR (Prices -Prix),
 - FO (Forestry -Forêt),
 - FI (Fisheries -Pêche),
 - WA (Water- Eau),
 - VA (Value Added -Valeur ajoutée)
- Thematic modules = M (Thematic Module),
- National institutions = I (Institution),
- International partners = P (Partners)

Annex A1 Indicator codes and matrix codes of «sub-national data»

	Standard Indicators disaggregated by geographical level, product and time	Matrix code				Dimensions/Variables
		Code FAO	Domain	Sub- domain	Sequential Number	
Production	Production Quantity of Primary Crops by administrative level 1, local product and year	XXX	S	PD	010	administrative level 1, local product, year
	Production Quantity of Primary Crops by administrative level 2, local product and year	XXX	S	PD	110	administrative level 2, local product, year
	Production Quantity of Primary Crops by country, local product and year	XXX	S	PD	410	country, local product, year
	Production Quantity of Primary Crops by administrative level 1, local product, year and month	XXX	S	PD	210	administrative level 1, local product, year, month
	Production Quantity of Primary Crops by administrative level 2, local product, year and month	XXX	S	PD	310	administrative level 2, local product, year, month
	Production Quantity of Primary Crops by country, local product, year and month	XXX	S	PD	510	country, local product, year, month
Population	Total population- Males- Females- Rural Population- Urban Population- Agricultural Population -					
	by administrative level 1, indicator and year	XXX	S	PO	010	administrative level 1, indicator, year
	Total population- Males- Females- Rural Population- Urban Population- Agricultural Population -					
	by administrative level 2, indicator and year	XXX	S	PO	110	administrative level 2, indicator, year
	Total population- Males- Females- Rural Population- Urban Population- Agricultural Population -					
	by country, indicator and year	XXX	S	PO	410	country, indicator, year
	Total population- Males- Females- Rural Population- Urban Population- Agricultural Population -					
by administrative level 1, indicator, year and month	XXX	S	PO	210	administrative level 1, indicator, year, month	
Total population- Males- Females- Rural Population- Urban Population- Agricultural Population -						
by administrative level 2, indicator, year and month	XXX	S	PO	310	administrative level 2, indicator, year, month	
Total population- Males- Females- Rural Population- Urban Population- Agricultural Population -						
by country, indicator, year and month	XXX	S	PO	510	country, indicator, year, month	

Annex A2 Indicator codes and matrix codes of «Thematic Module»

This domain refers to all modules and complex indicators relevant for the country.

Domain	Sub-Domain	Matrix code				
		FAOCode	Domain	Sub-Domain	Sequential number	
Thematic Modules	SUA	XXX	M	SU	XXX	
	FBS	XXX	M	FB	XXX	
	YEAR 2002-2003		XXX	M	03	XXX
			XXX	M	03	XXX
			XXX	M	03	XXX
	"	"	"	"	"	
	"	"	"	"	"	
	"	"	"	"	"	
New Sub-Domain	XXX	S0	ND	XXX		

« N » means new sub-domain.

The new sub-domain has to be described by the country (eg if the country wants to add the table "Number of animals vaccinated staff" must be placed in a category of "thematic modules" which could be named "Animal Statistics - Health Animal" matrix could be XXXMSA001.

Annex A3 Indicator codes and matrix codes of «National institutions and international partners»

Domain	Sub-Domain	Matrix code			
		FAOCode	Domain	Sub-Domain	Sequential number
National Institutions	Institution 1	XXX	I	XX	XXX
	Institution 2				
	Institution 3				
	.	XXX	I	XX	XXX
	Institution....n	XXX	I	XX	XXX
International Partners	Partner 1	XXX	P	XX	XXX
	Partner 2	XXX	P	XX	XXX
	Partner 3	XXX	P	XX	XXX
		XXX	P	XX	XXX
	Partner..n	XXX	P	XX	XXX

Annex A4 FAO Countries descriptions and codes

FAO Country Codes	FAO Country Descriptions
4	Algeria
7	Angola
53	Benin
20	Botswana
24	British Indian Ocean Territory
233	Burkina Faso
29	Burundi
107	Côte d'Ivoire
32	Cameroon
35	Cape Verde
37	Central African Republic
39	Chad
45	Comoros
46	Congo
250	Democratic Republic of the Congo
72	Djibouti
59	Egypt
61	Equatorial Guinea
178	Eritrea
238	Ethiopia
74	Gabon
75	Gambia
81	Ghana
90	Guinea
175	Guinea-Bissau
114	Kenya
122	Lesotho
123	Liberia
124	Libyan Arab Jamahiriya
129	Madagascar
130	Malawi
133	Mali
136	Mauritania
137	Mauritius
143	Morocco
144	Mozambique
147	Namibia
158	Niger
159	Nigeria
182	RTunion
184	Rwanda
187	Saint Helena
193	Sao Tome and Principe
195	Senegal
196	Seychelles
197	Sierra Leone
201	Somalia
202	South Africa
206	Sudan
209	Swaziland
217	Togo
222	Tunisia
226	Uganda
215	United Republic of Tanzania
205	Western Sahara
251	Zambia
181	Zimbabwe

Annex B. Examples of basic table-indicators in Excel format.

Annex B1 Example of a standard table

The picture below shows a table with 2 dimensions/variables. It is the format of tables of Core.

Production Primaire des cultures alimentaires (tonnes)		2005	2006	2007	2008
15	Blé				
27	Riz, Paddy				
56	Maïs				
79	Mils				
83	Sorgho				
94	Fonio				
108	Céréales, nda				

Annex B2 Example of a standard table with 4 dimensions/variables

The picture below shows a table with 4 dimensions/variables. Table formats with more than 2 dimensions/variables could be used in the Sub-National data domain.

Crops Production Indicator	Administrative Level 2	Year	Local Product	Local Product	Production Quantity	Area Harvested
40782	Ababa Zone1	2000	3	Soft Wheat	9045.455005	7527.239872
40782	Ababa Zone1	2000	4	Hard Wheat	6290.576287	5156.026625
40782	Ababa Zone1	2000	1	Yellow Maize	15289.12584	10926.79206
40782	Ababa Zone1	2000	2	White Maize	21475.37209	9979.646889
40782	Ababa Zone1	2000	5	Beans, Dry	1614.655377	1925.815996
40782	Ababa Zone1	2000	3	Soft Wheat	10923.00911	7373.317124
40782	Ababa Zone1	2000	4	Hard Wheat	100.73512	6369.792209
40782	Ababa Zone1	2000	1	Yellow Maize	34.65312	12666.6141
40782	Ababa Zone1	2000	2	White Maize	10.51115	13232.04688
40782	Ababa Zone1	2000	5	Beans, Dry	3.500077	4776.352102
40782	Ababa Zone1	2002	3	Soft Wheat	9868.736276	6196.969951
40782	Ababa Zone1	2002	4	Hard Wheat	12051.19038	7070.801551
40782	Ababa Zone1	2002	1	Yellow Maize	16260.29124	11978.03565
40782	Ababa Zone1	2002	2	White Maize	21417.67928	11004.75205
40782	Ababa Zone1	2002	5	Beans, Dry	1036.224085	2770.768669
40782	Ababa Zone1	2003	3	Soft Wheat	11564.18375	7689.478715
40782	Ababa Zone1	2003	4	Hard Wheat	10297.26121	7565.605919
40782	Ababa Zone1	2003	1	Yellow Maize	21604.33285	8616.614423
40782	Ababa Zone1	2003	2	White Maize	18943.22278	11943.15711
40782	Ababa Zone1	2003	5	Beans, Dry	1044.545078	2089.623514
40782	Ababa Zone1	2004	3	Soft Wheat	13680.60616	6700.858792
40782	Ababa Zone1	2004	4	Hard Wheat	13141.78148	9889.346121
40782	Ababa Zone1	2004	1	Yellow Maize	17398.68705	11312.75203
40782	Ababa Zone1	2004	2	White Maize	19854.47632	13249.62113
40782	Ababa Zone1	2004	5	Beans, Dry	2470.817589	3128.351873
40782	Ababa Zone1	2005	3	Soft Wheat	14808.10527	9126.165037
40782	Ababa Zone1	2005	4	Hard Wheat	18792.9923	11625.03019
40782	Ababa Zone1	2005	1	Yellow Maize	24486.18516	15147.76693
40782	Ababa Zone1	2005	2	White Maize	31882.94234	8952.915789
40782	Ababa Zone1	2005	5	Beans, Dry	2402.396765	2826.946236
40782	Ababa Zone1	2006	3	Soft Wheat	15719.49268	10346.03677
40782	Ababa Zone1	2006	4	Hard Wheat	16048.0736	10952.58942
40782	Ababa Zone1	2006	1	Yellow Maize	24673.29689	10814.91011
40782	Ababa Zone1	2006	2	White Maize	24151.07826	11241.132
40782	Ababa Zone1	2006	5	Beans, Dry	2563.12061	3698.603434
40782	Ababa Zone1	2007	3	Soft Wheat	18339.13501	9328.362718
40782	Ababa Zone1	2007	4	Hard Wheat	23921.61651	8697.079782

Annex B3 Example of a standard table with 3 dimensions/variables

General table structure with 3 variables

Title of indicator by var1, var2 and var3 (units)								
var1				VALUE1	VALUE2	VALUE3	VALUE4	VALUE5
var2	var2	var3	var3					
2222	Administrative lev1	XX	Local product 1					
2222	Administrative lev1	XX	Local product 2					

Same table with descriptions of title, variables, values and data

Production Quantity of primary crops by Administrative level1, local product and year (tonnes)								
Year				2001	2002	2003	2004	2005
Administrative lev1	Administrative lev1	local produc	local product					
3426	Central	005600	Maize	204230	416835	405282	329294	399719
3426	Central	008300	Sorghum	2240	2082	1354	972	2786

Another table with 3 variables containing Population

Population Projections by Administrative level 1, Indicator and Year								
Indicator			Year	Total	Male	Female	Rural Total	Urban Total
Administrative level 1	Administrative level 1		Year					
3428	Eastern		2000	1 306 173	648 677	657 496	1 190 716	115 457
			2001	1 348 196	669 863	678 333	1 229 314	118 882
			2002	1 391 792	691 839	699 953	1 269 320	122 472
			2003	1 437 055	714 650	722 405	1 310 817	126 238
			2004	1 484 066	738 349	745 717	1 353 890	130 176
			2005	1 532 825	762 930	769 895	1 398 615	134 210
			2006	1 583 453	788 459	794 994	1 445 046	138 407
			2007	1 636 078	815 002	821 076	1 493 287	142 791
			2008	1 690 647	842 522	848 125	1 543 391	147 256
			2009	1 747 337	871 105	876 232	1 595 427	151 910
3429	Luapula		2010	1 806 236	900 795	905 441	1 649 472	156 764
			2000	766 746	383 520	383 226	647 955	118 791
			2001	793 926	396 860	397 066	671 012	122 914
			2002	822 062	410 674	411 388	694 957	127 105
			2003	851 222	425 002	426 220	719 850	131 372
			2004	881 525	439 900	441 625	745 726	135 799
			2005	912 912	455 342	457 570	772 622	140 290
			2006	945 440	471 351	474 089	800 561	144 879
			2007	979 160	487 960	491 200	829 599	149 561
			2008	1 014 093	505 172	508 921	859 768	154 325
			2009	1 050 397	523 071	527 326	891 126	159 271
			2010	1 087 998	541 617	546 381	923 727	164 271

Annex C. Trade data coming from Trade offices in Harmonized System classification

The trade file coming from Trade offices should include annual data for all imported and exported commodities agriculture (including food aid) and non-agricultural, with detailed information on SH or SITC classification and with break-down by partner country. The trade data file should contain the following standard elements:

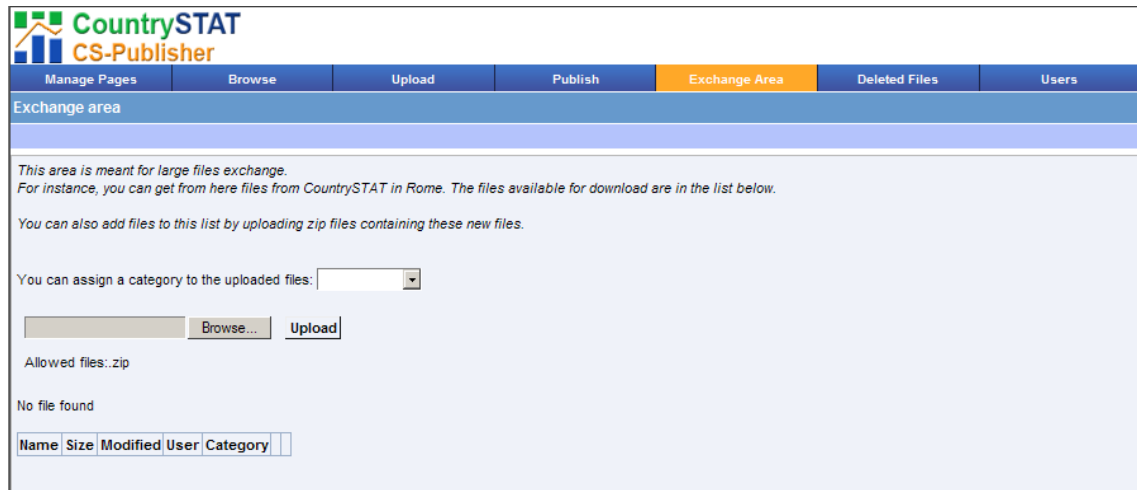
- the reference year;
- trade flow (import, export or re-export indicator);
- commodity code: HS or SITC at the most detailed classification level available (at least 6 digits, but preferably 8);
- partner country code (original country of imported items or destination countries of exported items);
- quantity;
- unit measure of quantity;
- other quantity;
- unit measure of other quantity;
- value (CIF, FOB) preferably in US Dollars (otherwise in national currency).

The data file format should be one of the following: CSV, MDB, DBF, XLS files.

To improve the efficiency and speeding up of data transfer there is a special area in the PX-Publisher "Exchange Area" where it is possible to upload each **zipped** file as the example below:

EXPORTATIONS 2006					
HS CODE	DESCRIPTION	DESTINATION Country	FOB Value (US DOLL)	Net Weight (Kg)	Quantity
01011000	Pure-bred breeding animals	DRC	3587	3000	20000
01011000	Pure-bred breeding animals	INDIA	100855	168000	2100
01011000	Pure-bred breeding animals	KENYA	2327	1200	3
01011900	Live horses, other than for pure-bred breeding	BURUNDI	1212	2000	25
01019000	Other:Live horses, asses, mules and hinnies.	JAPAN	6759	70	6
01021000	Live pure-bred breeding bovine animals	KENYA	5826	3500	45
01021000	Live pure-bred breeding bovine animals	COMOROS	754155	741480	2891
01029000	Live bovine animals, other than pure-bred breeding	CHINA	629	15	1
01029000	Live bovine animals, other than pure-bred breeding	KENYA	61069	50000	14361
01029000	Live bovine animals, other than pure-bred breeding	COMOROS	431	450	10
01039200	Live swine weighing >=50kg (excl. pure-bred breeding)	COMOROS	20200	10000	250
01041010	Purebred breeding animals (Live sheep and goats)	OMAN	2844	500	1
01041090	Other:Sheep :Purebred breeding animals	UNITED ARAB	1734	800	270
01041090	Other:Sheep :Purebred breeding animals	BURUNDI	808	1200	20
01042090	Other:Goats Purebred breeding animals	COMOROS	5920	14880	340
01051100	Live poultry, fowls of the species Gallus domesticus, ducks, geese, turkeys and guinea fowls.), weighing <=185g (chicks)	UNITED ARAB	1826	150	820
01051100	Live poultry, fowls of the species Gallus domesticus, ducks, geese, turkeys and guinea fowls.), weighing <=185g (chicks)	KENYA	1544	400	9000
01051110	A day old chick - parent stock	UNITED ARAB	6235	5500	5500

These files have to be uploaded in the PX-Publisher- Exchange Area, to support data on published tables as reference document of Trade. In this case CountrySTAT web-server is used as repository of main basic raw data.



CountrySTAT
CS-Publisher

Manage Pages | Browse | Upload | Publish | **Exchange Area** | Deleted Files | Users

Exchange area

*This area is meant for large files exchange.
For instance, you can get from here files from CountrySTAT in Rome. The files available for download are in the list below.*

You can also add files to this list by uploading zip files containing these new files.

You can assign a category to the uploaded files:

Allowed files: .zip

No file found

Name	Size	Modified	User	Category
------	------	----------	------	----------

To make this data comparable it has to be aggregated with FAO classification in order to be published in Trade sub domain and using the excel template as follows:

Export Quantity of Live Animals (heads)					
year		2005	2006	2007	2008
commodity	commodity				
1171	Animals Live Nes				
1107	Asses				
1181	Beehives				
946	Buffaloes				
1126	Camels				
866	Cattle				
1057	Chickens				
1068	Ducks				

Annex D. Examples of a correspondence table between national and international classification

Malawi

FCL Group TitleEN	FCL Item Code	FAOSTAT Nomenclature	Local code	local nomenclature
CEREALS AND CEREAL PRODUCTS	15	Wheat	001500	Wheat
	16	Flour of Wheat	001600	Flour of Wheat
	18	Macaroni	001800	Macaroni
	19	Germ of Wheat	001900	Germ of Whea
	20	Bread	002000	Bread
	21	Bulgur	002100	Bulgur
	22	Pastry	002200	Pastry
	23	Starch of Wheat	002300	Starch of Wheat
	24	Gluten of Wheat	002400	Gluten of Wheat
	27	Rice, paddy	002701	Kilombera Rice
	27	Rice, paddy	002702	Faya Rice
	27	Rice, paddy	002703	Bluebonnet Rice
	27	Rice, paddy	002704	Mixture, Rice
	27	Rice, paddy	002705	Other Local Rice
	27	Rice, paddy	002706	Other Rice
	28	Rice Husked	002800	Rice Husked
	29	Milled/Husked Rice	002900	Milled/Husked Rice
	31	Rice Milled	003100	Rice Milled
	32	Rice Broken	003200	Rice Broken
	33	Rice gluten	003300	Rice gluten
	34	Starch of Rice	003400	Starch of Rice
	38	Rice Flour	003800	Rice Flour
	41	Breakfast Cereals	004100	Breakfast Cereals
	44	Barley	004400	Barley
	45	Pot Barley	004500	Pot Barley
	46	Barley Pearled	004600	Barley Pearled
	48	Barley Flour and Grits	004800	Barley Flour and Grits
	49	Malt	004900	Malt
	50	Malt Extract	005000	Malt Extract
	56	Maize	005601	Maize hybrid
	56	Maize	005602	Maize composite
	56	Maize	005603	Maize local
	56	Maize	005604	Maize other
	57	Germ of Maize	005700	Germ of Maize
	58	Flour of Maize	005800	Flour of Maize
	63	Maize gluten	006300	Maize gluten
	64	Starch of Maize	006400	Starch of Maize
	68	Popcorn	006800	Popcorn
	71	Rye	007100	Rye
	72	Flour of Rye	007200	Flour of Rye
	75	Oats	007500	Oats
	76	Oats Rolled	007600	Oats Rolled
	79	Millet	007901	Finger Millet
	79	Millet	007902	Bullrush Millet
	79	Millet	007903	Mixture, Millet
	79	Millet	007904	Other millet
	80	Flour of Millet	008000	Flour of Millet
	83	Sorghum	008301	Local sorghum
	83	Sorghum	008302	Selected local sorghum
	83	Sorghum	008303	Improved sorghum
	83	Sorghum	008304	Brewing Sorghum
	83	Sorghum	008305	Mixture of sorghum
	83	Sorghum	008306	Other Sorghum
	84	Flour of Sorghum	008400	Flour of Sorghum
	89	Buckwheat	008900	Buckwheat
	90	Flour of Buckwheat	009000	Flour of Buckwheat
	92	Quinoa	009200	Quinoa
	94	Fonio	009400	Fonio
	95	Flour of Fonio	009500	Flour of Fonio
	97	Triticale	009700	Triticale
	98	Flour of Triticale	009800	Flour of Triticale
	101	Canary seed	010100	Canary seed
	103	Mixed grain	010300	Mixed grain
	104	Flour of Mixed Grain	010400	Flour of Mixed Grain
	108	Cereals, nes	010800	Cereals, nes
	109	Infant Food	010900	Infant Food
	110	Wafers	011000	Wafers
	111	Flour of Cereals	011100	Flour of Cereals
	113	Cereal Preparations, Nes	011300	Cereal Preparations, Nes
	114	Mixes and Doughs	011400	Mixes and Doughs
	115	Food Prep,Flour,Malt Extract	011500	Food Prep,Flour,Malt Extract

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