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Zambia Panorama Report-Final

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Acronyms

CFS	Crop Forecast Survey
CSO	Central Statistics Office
DoA	Department of Agriculture
FAO	Food and Agriculture Organisation of the United Nations
FDI	Foreign Direct Investment
FNDP	Fifth National Development Plan
GART	Golden Valley Agricultural Research Trust
GDP	Gross Domestic Product
MACO	Ministry of Agriculture and Co-operatives
MAZ	Millers Association of Zambia
MOFED	Ministry of Finance and Economic Development
NFBS	National Food Balance Sheet
PHS	Post-harvest Survey
PRSP	Poverty Reduction Strategy Paper
SADC	Southern Africa Development Community
SPGRC	SADC Plant and Genetic Resources Centre
TBZ	Tobacco Board of Zambia
TAZ	Tobacco Association of Zambia
UNDP	United Nations Development Programme
VAC	Vulnerability Assessment Committee
WFP	World Food Programme
WTO	World Trade Organisation
ZCGA	Zambia Coffee Growers of Zambia
ZEGA	Zambia Export Growers' Association
ZNFU	Zambia National Farmers' Union

Overview of Official Agricultural Statistics in Zambia

There are generally two kinds of statistical information collected by the Government in Zambia on the economy and social related issues:

- Statistical data collected according to an empirical process of sampling and estimation procedures
- Administrative data that is collected by staff as part of their routine work

The Central Statistical Office (CSO) has the official mandate to publish all official statistical data in Zambia. This mandate relates to statistics collected according to an empirical sampling procedure. Other agencies and ministries do generate statistics administratively. These may also be compiled in collaboration with CSO. Examples of such statistics include international trade statistics collected at borders by the Zambia Revenue authority. The dissemination of all Government statistics relating to Agriculture and Food is preceded by a process of consistency checks and reviews of the data analytical procedures.

Various other agencies and bodies do collect statistical information on agriculture and food in Zambia. However, some of these statistics are fairly localized and collected to facilitate decision making, not necessarily following a strict empirical process. Although sometimes used for official policy formulation, such statistics are not generally covered in this panorama.

1. The National Statistics System

1.1. Current legal framework of Statistical Advisory Bodies

According to the Census and Statistics Act of the Laws of Zambia, the Central Statistical Office (CSO) in Zambia currently has the mandate to produce all official statistics for Government. CSO is currently a department within the Ministry of Finance and National Planning. The CSO is headed by the Director of Census and Statistics who reports to the Permanent Secretary, Ministry of Finance and National Planning.

The CSO generates statistics independently and jointly with other Government ministries and agencies. Some of the statistics generated independently by CSO include the commodity retail prices for use in estimating the CPI and related inflation figures. National accounts data is also collected independently by the CSO. The CSO also has numerous collaborative statistical activities that involve the joint collection of statistics and data with relevant line ministries and Government agencies. Examples of such statistics include the Demographic and Health Survey, conducted by CSO in collaboration with the Ministry of Health. The methodology, sample and frame is generated using CSO expertise. The Ministry of Health provides the financial resources as well as some of the field staff. Analysis of the data as well as report writing are conducted jointly by the participating Government agencies. Similar partnerships are undertaken with the Ministry of Labour on the Labour survey as well as the Crop Forecast and Post Harvest Surveys conducted jointly with MACO.

Part IV of the 1964 Census and Statistics Act, Chapter 425 of the Laws of Zambia mandates the Director of Census and Statistics or the Central Statistical Office (CSO) to generate Government official statistics. The law further provides for the delegation of statistical operations to Statistical units in other Government institutions. The CSO has delegated the collection of some statistics to other Government wings. An example of this is given in the section on international trade which provides a description of the relationship between the ASYCUDA system and the CSO.

Although there has often been a divergence of understanding between the role of official Government statistics and statistics generated for use in administrative planning of programmes there are more than 30 pieces of legislation in the laws of Zambia some of which implicitly provide for the generation of agriculture information for planning and decision making purposes.

1.2. Structure of the National Statistical System and the NSDS

In order to improve the quality and scope of statistics generation in Zambia, the country has been undergoing a process of setting up the National Statistical System (NSS). The formation of the NSS is envisaged to help create a guiding framework for collaboration in the generation of statistics in Zambia. The setup of the NSS has been carried out using the National Strategy for the Development of Statistics (NSDS) as the primary vehicle. The creation of the NSS system aims at dovetailing with the on-going programme for the attainment of the Millennium Development Goals (MDG's) and the Fifth National Development Plan (FNDP).

According to the CSO the NSDS has been designed to provide a holistic, coherent and comprehensive framework for improving the NSS and developing official statistics in the country in a sustainable manner. It aims to bridge the identified data gaps by increasing the relevance and availability of data, improving the cost-effectiveness of data collection and developing capacities for data management as well as data analysis across all sectors**.** It provides a long-term vision, mission**,** core values and strategic goals and actions for developing national statistics, addressing institutional, organizational and technical constraints and processes, including resources, as well as statistical sub-systems and outputs.

The strategy is intended to address the issues brought out from the situation analysis and needs assessment report with regard to the status of the NSS in Zambia. The goals set and the strategies formulated to achieve them are intended to address the weaknesses and threats existing in the NSS.

A situation analysis was conducted of the current status of Zambia's statistical system and this analysis brought out several critical issues that the NSDS aims at addressing.

The identified weaknesses and threats are summarised below:

Weaknesses

Limited knowledge of national and international development processes and statistical standards;
Under-development of the NSS;
Outdated Statistical legislation;
Resource constraints;
Low status of CSO in Government hierarchy;
Limited coordination and Collaboration in statistical production;
Under developed Sector Management Information Systems;
Non-existence of in-service training;
Limited human resources;
Lack of timeliness in data release;
Lack of ease of data access;
Failure to update the geographical frame;
Non capture of all business entities in the business register;
Un-prioritised census and survey work programme;

Threats

Low level of appreciation and understanding of statistics
Perceived undue interference with statistical production and release
High cost of censuses and surveys
Limited budgetary allocation
Inability to attract and retain staff
Lack of commitment to coordination, collaboration, networking and information Sharing
Non cooperation of data suppliers
Respondent fatigue

HIV/AIDS

The goals and strategies are also intended to take advantage of the existing strengths in the NSS and opportunities in the environment. The identified strengths and opportunities are listed below:

Strengths

Existence of core competences

Established statistical infrastructure i.e. field organisation; business register and geographical frame

Data relevance

Compliance with professional and international standards

Existense of comprehensive National Statistical Training Strategy

Opportunities

Increased government commitment to development of statistics

Increased demand for data

Possibilities to share experiences, resources and facilities in SADC and the African region

Existence of international professional statistical standards/frameworks

International partnerships for statistical development

Advances in IT

1.3. National Strategy for Development of Statistics

The NSDS sets out an integrated statistical development programme, which is flexible enough to cope with change. In doing this, it is recognised that even though all sectors will be covered during the first five years within which the NSDS will be operational, the activities will be prioritised. High preference will be accorded to data required to monitor and evaluate the Fifth National Development Plan (FNDP) and the progress towards the achievement of Millennium Development Goals (MDGs).

Care will be taken to ensure that data collection does not outstrip the capacity to process, analyse and disseminate official statistics as has been the case not only in Zambia but in other developing countries in Africa.

Many countries have also established information units or systems for specific purposes such as providing early warning, promoting market efficiency, monitoring health and nutrition status, or preparing food security situation assessments. In many developing countries similar information systems are maintained by donor agencies or non-governmental organisations, either in parallel to on-going government-supported information systems or in partnership with governments. These activities are usually established for purposes of monitoring specific programmes or for assessing the need for food aid and targeting its delivery.

The revised mission statement for the Central Statistical Office, which it will endeavour to accomplish, is:

> **"To coordinate and provide timely, quality and credible official statistics for use by stakeholders and clients for sustainable development".**

The revised mission statement implies that CSO will play a crucial role in coordinating and delivering the National Statistical System, which will be central to provision of a broad range of statistical data, necessary for monitoring the implementation of national development initiatives. Related to the mission statement, the revised goals of the CSO seek:

> **"To achieve an effective, efficient and coordinated National Statistical System (NSS) that will ensure sustainable production and dissemination of demand driven official statistics for national development".**

In order to achieve the revised mission and goal, and give CSO specific accountabilities against which the overall performance will be assessed in the next five years, revised objectives with their corresponding strategies and output indicators that will be tracked in the next five years have been generated. Some of the strategies include

I. Design and Implement work plans/ programmes;
II. Review and implement statistical methodologies;
III. Undertake statistical advocacy programmes;
IV. Design and implement a mechanism for producing disaggregated data; and
V. Develop and implement a Monitoring and Evaluation (M&E) system.

2. Reference Situation for the Food and Agricultural Statistical System

2.1. Legal Framework and Food and Agriculture Statistical Advisory Bodies

The Census and Statistics Act empowers the Director of Census and Statistics to collect official statistics. Specific to agriculture, the Act stipulates the guidelines for the collection of statistics relating to;

Statistics (Agriculture) Regulations
Creamery Products Regulations
Meat Regulations

The act further empowers the Director to delegate authority and power of appointment for the collection of statistics to any relevant officer. Currently, the three main surveys related to agriculture statistics in Zambia are collected under the authority of the Act. The Crop forecast, Post harvest and Supplemental Survey rely on the power of the office of the Director, Census and Statistics to provide the methodological, sampling and field data collection staff. However, due to some structural changes in the Zambian agricultural sector, the Creamery and Meat regulations have not been applied to stand alone surveys. This is further outlined in section 2.2: Structure of the Food and Agricultural Statistics System.

The Agriculture and Statistics Act provides for the collection of agricultural statistics; to provide for the compilation and publication of statistics. The Act provides for the collection of statistics relating to;

- Pastoral, agricultural, horticultural and dairying industries
- Factories dealing with animal or vegetable products of the country
- Land tenure and occupancy

- Any other matter relating to rural industries prescribed by the Minister by statutory notice.

The regulations further empower the Agricultural Economist to collect statistics relating to costs of agricultural production and prices from all persons in charge of farms or estates, whether owners, lessees or managers etc to provide returns every year no later than 30th September.

The National Early Warning Unit is responsible for coordinating all early warning activities as well as the collection of statistics related to agriculture. The major task of the Agriculture Statistics and Early Warning Section is to collect, store, manage and constantly update vital agricultural information, including agricultural statistics. It also carries out crop monitoring surveys and food security studies.

2.2. Structure of the Food and Agricultural Statistics System

There are four main sources of official Government statistics relating to food and agriculture in Zambia namely;

- The Central Statistical Office
- The Ministry of Agriculture and Co-operatives (MACO)
- The Vulnerability Assessment Committee (VAC) chaired by the Office of the Vice President, Disaster Management and Mitigation Unit
- Universities and Colleges

The need for an institutionalized and reliable Food Security Information System was recognised following the 1977/78 season in which the country experienced poor crop output. Prior to 1982, the Crop Forecast system could not adequately predict expected food shortfalls resulting in ad hoc and hurried decisions being made with regard to arrangements for imports. The National Early Warning Unit (NEWU) was established in 1982. NEWU was started with funding from the Royal Netherlands Government and Technical assistance from FAO.

Composition of NEWS includes;

- Central Statistics Office (CSO)
- Ministry of Agriculture and Co-operatives
- Department of Meteorology (DOM)
- Office of the Vice President, Disaster Management and Mitigation Unit (DMMU)
- National Food and Nutrition Commission (NFNC) under the Ministry of Health
- Department of Field Services
- Parastatal and Private companies such as Zamseed, FRA
- NGOs such as PAM, Oxfam, CARE, World Vision
- UN Agencies such as FAO, WFP and UNICEF

The Central Statistical office conducts two major annual surveys to collect crop and agricultural statistics. These are the Crop Forecast Survey, typically conducted in the first quarter of the year and the Post Harvest Survey, conducted in the last quarter of the year. Both surveys are conducted in collaboration with MACO. The CSO also collects monthly price data on various food and agricultural products. The price data is used in the generation of the Consumer Price Index. The Crop Forecast data is also used as an input in the generation of the National Food Balance Sheet (NFBS). The NFBS guides import and export decisions by both the Government and private sector.

MACO also collects statistics related to livestock in Zambia. This information is collected through administrative channels and not using a sample survey.
The VAC a multi-sectoral body chaired by the Office of the Vice President Disaster Management and Mitigation Unit, and consisting of membership from a wide spectrum of Government, UN-agencies and NGOs, generates statistics on food insecurity based on rapid assessments in areas affected by a shock. This information is usually not produced on a nationally representative level but is localized within the identified area requiring mitigation.

Data suppliers to the National Early Warning system include households, farmers, establishments and institutions and private companies and firms. Information generated through this system includes the annual Crop Forecast (CFS) and Post

harvest (PHS) surveys which are primarily a joint collaboration between CSO and MACO. The Crop Forecast is generated between May and June of every year.

Prior to the announcement of the results of the Crop Forecast Survey, a monthly crop monitoring report is issued. Accompanying the report is an estimate of the expected yields of maize for the season, given the season rainfall performance up to that point. This yield estimate is generated in collaboration with the Met office using some statistical and regression analysis tools. This is discussed in further detail in section three.

Early Warning Statistics and Information System

Different types of food and agricultural statistics feed into various decision making protocols. The Early Warning System for Food security primarily relies on the Monthly crop monitoring, decadal weather reports, CSO retail price data and the Crop Forecast Survey for the provision of early warning information for food security. In addition, there has been an increasing reliance on satellite imagery data that is interpolated with historical yield and production trends to try and forecast potential output. The satellite data relies heavily on the presence of quality historical statistical data on both weather performance and yields.

Crop monitoring data is generated by MACO field extension staff who use qualitative field data observation methods and administrative information to estimate the quality and quantity of crops and livestock in their catchment areas. This data is then compiled and aggregated to district level and a single questionnaire sent to Lusaka. Concurrent to the generation of data through the crop monitoring questionnaire information system, an Early Warning Card detailing crop conditions in relation to weather performance is sent to the meteorological office in Lusaka. This feeds into the national qualitative estimation of general crop conditions of the evolving season. The crop monitoring and early warning card information are compiled starting November of every year. The last report is released in July, as the crop marketing season begins.

Price Data

Price data is an integral part of any Early Warning System. Usually one of the first indicators of stress in availability of food is an increase in price at local markets. The main analytical vehicle for price data in Zambia is the Consumer Price Index generated by CSO. The CSO data is analyzed by FEWSNET which generates a monthly bulletin showing price trends of the major staple crops. FEWSNET obtains the monthly raw price data from CSO and generates trends analysis etc. CSO collects retail price data from approximately 40 districts in all the nine provinces of Zambia. MACO does also collect weekly price information from major district markets. The MACO information is wholesale price data and is used in the Agricultural Marketing Information Centre bulletins. MACO is the primary agency responsible for generating price data using the AMIC system. The CSO weights all non packaged commodities for which they collect price data. MACO does not weigh the commodities but relies on the measurement provided by the sellers.

In addition to the above mentioned prices, MACO also generates producer prices (farm gate prices) from small holder farmers. This price data is based on the post harvest survey and involves aggregation of the reported sales prices from the previous season of small holders to district level. This data has typically been available on an annual basis but with the inclusion of a month of sale variable, it will be possible to generate monthly mean producer prices. It is important to note that small holder producer price data for a particular season is typically only available after a year.

Gross Domestic Product-Agriculture Sector

The Post Harvest Survey data is used in the compilation of the contribution of agriculture to GDP. However, the PHS survey is normally conducted in September/October of every year and this is too late for preliminary GDP estimates. Consequently, the Crop Forecast Survey data is used as the preliminary indicative data for contribution to GDP. The estimates are revised when the PHS is conducted and the data made available. CSO and MACO are the primary institutions involved in the generation of GDP-agriculture sector estimates.

Vulnerability Assessment Information-Food Security Information

The VAC is a collaborative institution chaired by the DMMU under the Office of the Vice President. The VAC process relies on input from the Crop Forecast Survey, crop monitoring reports, dekadal weather reports and other sources of information to generate a preliminary picture of the country's food security situation. Areas that are identified as likely to face food insecurity on account of poor crop performance or poor weather indicators are selected for an assessment to further ascertain the situation on the ground. The VAC process is multi-sectoral and involves a cross section of Government agencies, NGO's and UN agencies. The first round of Rapid assessments is normally conducted around July, soon after crop forecast estimates are available. Several more rounds of ground verification normally take place during a season.

Description of other players in the crop statistics sector

The major crop surveys conducted by MACO and CSO cover most of the major crops grown by most agricultural households in Zambia. However, the nature of the sample selection means that certain so called 'special crops' that do not have wide coverage in terms of the number of farmers growing them. For such crops a conventional sample survey is not efficient in estimating variables related to crop production.

In such instances, MACO does conduct specialized crop surveys that involve purposive sampling of production entities as well as the collection of information from relevant industry associations. Several examples of such surveys exist.

Sugar Statistics

Sugar production in Zambia is concentrated in three geographical areas, the Kalungwishi plantation in the Northern province, Sable farms plantation in Kafue district and the Nakambala estates and surrounding farms in Mazabuka district.

A sugar producers association of Zambia exists. However, collection of statistics involves visits to the three mentioned regions. The Kalungwishi and Sable farm plantations are each single operations. However, Mazabuka has several large sugar growing operations, chief of which is the Nakambala sugar estates managed by

Zambia Sugar Company limited, a subsidiary of Illovo limited a multinational specializing in sugar production. All the other growing operations sell their raw cane to Zambia sugar company. Zambia sugar does maintain an elaborate database for tracking the production of sugar from the other growers who supply the firm. This database is used to process payments to suppliers of raw cane. The Zambia sugar database also tracks the application of fertilizer to the cane fields. The major outputs of the database include area planted, quantity of raw cane harvested in metric tons, extraction rates of sugar from raw cane and application of fertilizers to the cane fields, quantity of sugar produced, sales and exports of sugar. It is often not necessary to visit all the individual cane growers in Mazabuka as this information is easily obtained from the Zambia Sugar Database.

The Coffee Sector

The Coffee Board of Zambia was instituted by an Act of Parliament through the Coffee Act. The Board was instituted to act as the main regulatory body for the coffee industry in Zambia. The Coffee board was to be a link between the government and the industry on regulatory and policy issues. The board was a purely regulatory body whose decisions were to be implemented by the Zambia Coffee Growers Association and other agencies, e.g. phytosanitory & plant protection services, Customs issues etc. The Coffee act nominated the Association as the sole marker of Zambian coffee.

Coffee statistics related to number of farmers growing coffee, area under coffee, production of green coffee beans, production of dried processed beans, exports and prices received for sales are all available from the Zambia Coffee Growers Association. The information from the Board is available at the national level.

The Tobacco industry

The tobacco industry is structured along similar lines as the Coffee industry. A tobacco board formed by an Act of Parliament exists to regulate the industry. The board collects and manages a database for the tobacco industry. The Tobacco Association of Zambia provides services related to auctioning, marketing and advocacy for the industry. There are two main types of tobacco grown in Zambia,

burley grown mostly by small and medium scale farmers and Virginia tobacco, grown mostly by large scale farmers. The CFS and PHS surveys tend to collect more reliable estimates on Virginia tobacco. This is because coverage of large scale farms, especially those growing tobacco tends to be relatively good. However, the surveys do not pick up burley estimates very well. Burley, grown mostly by small scale farmers in the Eastern province is a highly localized crop.

The national agricultural household frame is not designed to be efficient for highly localized crops. In order to improve the efficiency of statistics on burley production, it would be necessary to conduct a specialized survey with a sample frame that is specific to the major growing areas. The additional cost of conducting a specialized burley tobacco farmer survey probably outweighs the benefits, especially when the fact that relatively accurate national estimates on production and area are generated by the industry. The only disadvantage with these estimates is that they are not household based and therefore detailed analysis of economic relationships and interactions is not possible.

Cotton Sector

There are five main players in the cotton sector outside of the Government;

1. Cotton Association of Zambia (CAZ) whose role is to Strengthen farmers groups for effective participations in the industry
2. The Cotton Ginner's Association- Observance of the rules and regulations of the industry as per cotton Act
3. Golden Valley Agricultural Research Trust- Provides support for Cropping systems research
4. Conservation Farming Unit- Promote the use of conservation agriculture technologies
5. Cotton Development Trust

The collection of Cotton production statistics poses similar challenges to the collection of information on tobacco. Cotton is grown in certain parts of Eastern, Central and Southern provinces. The estimates generated by MACO have tended to

vary from estimates generated by the industry. The Cotton and Ginners Associations do provide estimates of production. However, the estimates are aggregated to provincial and national level. It is not possible to undertake detailed analysis of the economic relationships and interactions of the cotton farming system.

2.3 National Strategy for Food and Agriculture Statistics

The National Strategy for food and agriculture statistics is focusing on halting the decline in the provision of official statistics and to lay a basis for a more efficient statistical system and service capable of meeting the information needs for the PRSP,NDPs (FNDP) and other national development initiatives.

The strategy is also amplified in the current Agriculture chapter of the FNDP which indicates that the focus is on Timely collection, analysis and dissemination of credible information to facilitate effective and accurate decision making and action to avert food insecurity and disasters

- Management Information System (in infancy stage)
- Agricultural field staff (Camp officers)
- Agriculture surveys: Crop Forecasting and Post Harvest Survey
- Multi-sectoral surveys: Living Conditions Monitoring Survey, FHANIS, Vulnerability Assessments (VAC)

Human Resources Available

A major challenge in Zambia has historically been the retention of qualified and experienced staff by Government. The attrition rate amongst the most qualified staff is relatively high due to relatively poor conditions of service in the civil service in comparison to the private sector, UN agencies and donor supported projects. The advent of HIV/Aids has also significantly negatively impacted on the staff compliment in Government in general. As an illustration, the 2002 staff compliment of the national early warning unit (now called the agriculture statistics and early warning section) was eight. Two staff were lost to illness and two staff left to work for donor

funded projects, representing an attrition rate of 25% to illness and 25% to other organizations. However, despite the loss of staff, the Government has continued to train staff at graduate and short course level.

Broadly, there are two kinds of skills needed in the food and agriculture statistics system

a. Sample selection skills and knowledge in methodological approaches to statistical surveys
b. Data manipulation and analytical skills

Both types of skills require considerable investment in training in order to have a cadre of staff who are competent and well able to conduct a survey that meets international standards of empiricism and analytical quality.

Sample selection and methodological approaches

CSO is the custodian of all methodological approaches for Government surveys. The sampling frame for agricultural surveys is generated from the National census and requires translation into a usable frame for agriculture statistics. The selection of standard enumeration areas to be covered in the survey requires both intricate knowledge of statistics and knowledge of the actual sample areas. This combination of attributes only comes with a high investment in training and years of experience in the field.

Standard university courses in statistics do not offer sufficient skills in survey management. Newly employed staff have to undergo considerable training in various short courses. Much of the training is conducted regionally at Makerere University in Uganda and at the University of Michigan in the United States.

Data Manipulation and Analytical Skills

There are three main data analytical packages used by CSO and MACO in the analysis of agricultural data.

CSPro is a free software developed by the US Bureau of Census and is used for data entry for very large data sets. The software is used as the primary data entry package by the CSO for all statistical surveys undertaken by the agency. CSO migrated from the DOS based IMPS system. CSpro is windows based. The migration to CSpro required considerable investment in training of data entry operators and the data analysts. CSO has an adequate pool of staff who are well versed in CSPro and have been using it both as a data entry tool and do have the necessary skills to handle the data dictionaries, transfer to other spreadsheet and analysis packages such as SPSS, SAS and Stata. MACO does not have staff who are proficient in CSPro. The Ministry relies on CSO staff for work involving CSPro.

Data cleaning and analysis of survey data is done in SPSS for all agriculture surveys. Other sections of CSO use SAS as the main analytical software package. Considerable resources have been expended over the years in training both MACO and CSO staff in data analysis. Currently both institutions have a well developed cadre of staff who routinely use SPSS for everyday analysis.

Storage of the final datasets from the crop surveys is done in SPSS. Output tables are generated in SPSS and converted to Microsoft excel spreadsheet. All final statistics generated for distribution to users are given out in excel and PDF format.

A major constraint on non human resource availability has been the very high cost of analytical software. CSO and MACO have relied on donor support to procure the necessary site licences for SPSS. Much of the training and software purchase support has been provided by the Food Security Research Project under Michigan State University with funding from USAID.

2.6. Dissemination Policy

Crop Forecast Data and the National Food Balance Sheet

Once the data cleaning and verification of the CFS data is concluded and finalized, the National Food Balance Sheet (NFBS) is generated by the Agriculture Statistics and Early Warning Section, in collaboration with CSO. The results are presented to MACO/CSO Senior Management for discussion and interpretation. It is important to note that statistical data can only be verified and reviewed on the basis of the verification of the entries in the questionnaires. This is done during the data cleaning process. The methodology itself is standard.

Although the food balance sheet relies on input data from the crop forecast survey, it also utilizes information from other sources such as CSO population growth estimates, industrial utilization of staples, historical per capita consumption patterns etc. Data that goes into the generation of the food balance sheet. Sometimes there is more than one source of information for inclusion into the balance sheet. A Stocks Committee chaired by the Permanent Secretary in the Ministry of Agriculture and Co-operatives reviews all the different data inputs required for generation of the food balance sheet. Industry stakeholders make submissions on the accuracy of the estimates. Once consensus is reached, the food balance sheet is finalized and adopted by the Minister of Agriculture.

A Ministerial statement is released to the nation using established media and the ministry's own National Agricultural Information Services (NAIS). Starting in 2009, the ministerial statement, production figures and balance sheet were posted to the MACO website. The ministerial statement is the first and most important platform for disseminating information to the wider public. Hard copies of the balance sheet are printed for distribution to members of the public who walk into the ministry requesting for information.

Sometimes there is a lack of a clear distinction between users and producers of data. For instance, MACO is both a producer and user of data relating to crop production, stock levels and the national food balance status. This means that several internal consultative meetings are normally held to disseminate information collected by the ministry among the different users within the Ministry. For instance

the marketing and international trade sections use the information in planning the import/export permit issuance process. The Food Reserve Agency concludes its purchase schedule for the marketing season after the final crop forecast and food balance information is finalized.

CSO Price Data

The Central Statistical Office is the major user of price data for different crop and food commodities. This price data is used in the compilation of the Consumer Price Index (CPI). The CPI is used in the estimation of the country's inflation rate. Price data is collected monthly and compiled by the Price Section. Once the CPI is finalized the monthly CPI and inflation rate information is released to the public in the CSO's monthly publication called the 'Monthly'. After the release of the monthly at a press briefing, the report is posted online.

Aggregate national price changes for selected commodities of wide interest are included in the publication of the monthly. However, the individual data points consisting of district price data for the selected commodities are not included in the publication. This data is available on request to the CSO Director.

Vulnerability Assessment Committee data on food insecurity

The VAC is a inter-governmental and NGO collaborative effort that provides Early Warning information on various aspects of food security. The VAC relies on secondary data sources from member agencies. Primary data is also collected as and when needed. A major tool for the collection of primary data is the Rapid Assessment in areas affected by a shock.

Typically, the report based on the rapid assessment is released to the public at a VAC meeting consisting of members, donor agencies and other interested stakeholders. The primary data itself is not released. This is because rapid assessments do not usually have a consistent methodology and rely partly on the assessment of the local leaders, the community etc to generate conclusions on the situation in the affected area. Information collected in this manner is not likely to have a very consistent

empirical methodology that can stand up to rigorous scrutiny. The purpose of such information is to give a rapid initial overview of the situation on the ground.

2.7. Modalities for Promoting User-Producer dialogue

Technical Committees at the directorate level within the Government form the main platform for clearing and disseminating official Government information and statistics. These committees are the initial point of interaction between the Government and private sector, before broader dialogue is fostered in the dissemination of statistics. Examples of these committees include;

MACO Directorate

Senior Management is the first to be briefed on the statistical findings of major surveys such as the crop forecast survey. The purpose of the briefings is to obtain feedback especially from the user departments such as the department of agriculture, agri-business and marketing etc.

The Early Warning Technical Committee under the Policy and Planning Department at MACO

This committee meets to discuss the Agriculture Statistics based on the different surveys that the Ministry undertakes. It is important to note that discussions of published statistics involve questioning the methodology and the triangulation of findings using alternative sources. The NEWTC is chaired by the Policy and Planning Director in MACO.

The Stocks Committee

The stocks committee discusses the country's food stock status using information from various sources such as sample surveys, trade data, production information and trends from the industry etc. In cases of overlap between the two committees, joint meetings are held. The stocks committee is chaired by the Agribusiness and Marketing Director in MACO.

Other Non-Governmental platforms for the dissemination of agricultural statistics exist within the sector. Examples of these include the Agricultural Consultative Forum.

Agricultural Consultative Forum (ACF)

The ACF aims to promote in a non-partisan manner private-public sector consultation and participation in the development and implementation of agricultural sector policies. This will be achieved by providing an environment that facilitates constructive dialogue, information sharing and communication amongst private and public stakeholders in the agricultural sector.

Strategic Objectives

I. To facilitate continuous consultation among key stakeholders in the agricultural sector.

II. To provide informed advice in the formulation, updating, designing and operationalization of agricultural policies and programmes.

III. To provide a channel for information gathering, analysis, networking and sharing among stakeholders.

IV. To provide an independent perspective and feedback on the performance of the agricultural components of Zambia's Poverty Reduction Strategy Programmes.

A major way in which the objectives of the ACF are achieved is through holding dissemination meetings and discussions over any research findings within the agricultural sector. Key stakeholders such as the farmers union, private sector milling industry and Government are invited to provide feedback in an open transparent manner.

Disaster Management Consultative Forum (DMCF)

The mandate for generating information relating to disasters and other shocks that impact households lies with the Vulnerability Assessment Committee (VAC) chaired by the Disaster Management and Mitigation Unit. Given the nature of the sector, there is considerable donor presence and involvement in activities related to disaster management. All statistics generated using the VAC process are discussed at the technical level under the VAC technical committee. Once approved the statistics and

resulting report are shared with the DMCF. The DMCF is chaired by the Permanent Secretary with representation from various agencies such as the UN, donors, embassies and other NGO's.

SADC-Plant and Genetic Resource Centre (SPGRC)

The SPGRC falls under the Food, Agriculture and Natural Resources (FANR) Directorate of the SADC Secretariat and aims at conserving and guaranteeing safe preservation of crop and wild plant genetic resources; document the plant genetic resources of the region to ensure their efficient and sustainable use and provide a forum for exchange of scientific as well as cultural, traditional and indigenous knowledge and experiences; to train personnel in plant genetic resources and co-ordinate plant genetic resources activities in the region.

The SADC Plant Genetic Resources Centre (SPGRC) in Lusaka, Zambia maintains and coordinates the plant genetic resources activities for the region. Nationally, each SADC country has a National Plant Genetic Resources Centres (NPGRCs) which maintains active collections for short-term storage for immediate use in crop improvement. The NPGRC maintains an electronic as well as physical databank of a comprehensive set of plant and agricultural materials such as seeds.

Golden Valley Agricultural Research Trust

The Golden Valley Agricultural Research Trust (GART) was created in 1993 by the Government of the Republic of Zambia in partnership with the Zambia National Farmers Union, as a substantially self-sustaining and autonomous Public Private Partnership Initiative and as part and parcel of the National Agricultural Research and Extension System (NARES). It is registered under THE LAND PERPETUAL SUCCESSION ACT (CAP 288) of the Laws of Zambia. The broad objectives of GART are translated into two science and technology programmes and one supporting programme.

GART has two CORE science and technology programmes namely:

- Research and Development of Conservation Agriculture
- Research and Development of Smallholder Livestock Systems

On station, these activities are grounded in systematic and statistical evidence building through generating trials. Consequently, the GART has an extensive database of information relating to the various farming systems in Zambia and the interaction of technology with improvements in the relevant metrics.

Millers Association of Zambia (MAZ)

All milling companies with a processing capacity in excess of 1.5mt/hour are eligible to become members of MAZ. The association maintains a database of the processing capacity of all its members. In addition members of MAZ submit annual returns to the association of how much of their processing capacity they are utilizing, the types of grains they are processing and their pricing structure. Although this information is considered very sensitive and of a high commercial value, very high discretion is applied in its use.

When required, the ministry will collect information relating to the milling sector and present it only as aggregated information at the national level.

2.8. Existing databases and data dissemination tools and platforms

Crop and Livestock Monitoring Database

The FAO with assistance from DFID provided technical assistance for the Ministry of Agriculture and Co-operatives to create a crop and livestock monitoring database. The aim of the database was to assist with archiving and quick retrieval of relevant information on crops and livestock. The database was developed in MS Access software and used the standard excel production figures from the crop forecast survey as well as monthly crop monitoring information.

The database was supposed to be on CD and would be installed on the machines of users. A basic query language was supposed to be used to retrieve the information from the database. Updates to the Crop and livestock database were supposed to be made on a seasonal basis and new versions of the CD released to the public.

Traditionally MACO has maintained a database of all agricultural statistics in excel. Although rudimentary, the excel database has considerable advantages of ease of use. The high staff turn over means that training of new staff or interns has to be an important consideration in the type of database that is used.

SADC AIMS Database

In 2003, as part of re-structuring of the SADC, Secretariat mandated to establish an integrated agricultural information system consisting of existing and upcoming information systems. However, insufficient funds and human resources were mobilized to implement AIMS (according to a study on the process by FAO in 2005). Meanwhile, several additional processes were being implemented using donor-funded projects e.g. ICART, Land & Water Management information systems, PRINT etc, each with an information system component and with the goal of being a sustainable system. Thus, from 2006, through technical and financial support the conceptualization and prototyping of the AIMS system was done. To date, the AIMS has been conceptualized, has a functional prototype of a common interface. In 2009 a feasibility study of major AIMS implementation projects is to be launched for funding under the 10th EDF. The AIMS portal already has a search engine portal that members can use to access information for the member countries whose websites are already active and online. The SADC-AIMS project website is http://aims.sadc.int

SADC AIMS process identified four categories of data

1. Numerical Data
   e.g. Production, Social, Climate, Trade, Stats
2. Spatial/GIS Information
   e.g. Natural Resources use, production, climate, disease
3. Directories and Information object repositories
   Institutions, People Documents, Metadata Graphical Interface of
4. Content Management System and Communication tools

Functionalities of the AIMS portal

- To present spatial and non-spatial information
- To develop directories of institutions (and experts) – information exchange standards
- To carry out customised search for projects, technologies, people, institutions, publications
- To establish electronic networks- thematic & national, using tools for communication (dgroup forums), collaboration (wiki) & dissemination (mailing lists, photos, audio, video)
- To devolve content generation to level of information producer
- To aggregate national news/events at regional level using Web 2.0 tools such as RSS Feeds

Zambia Social and Economic Database (now ZambiaInfo)

In 2003 the Zambian Central Statistics Office and UNICEF jointly launched ZAMSED, the Zambian Socio-Economic Data Base. A customized version of the ChildInfo Software programme, ZAMSED was supposed to give local officials powerful Geographic Information System and Data Base Management tools. The current version has more than 1000 indicators for Demography, Economy, Education, Environment, Health, Nutrition and Protection. Mapping has been developed for national, provincial, district and ward levels. The ZAMSED database was to be managed and maintained by a multi-sectoral task force with representation from the Zambia Social Investment Fund (ZAMSIF), the Ministry of Education (MoE), the Ministry of Health (MoH), UNDP and UNICEF. An estimated 200 CD copies of the database were distributed at the launch. Updates were to be issued on a 6 monthly basis and a web version was made available at www.zamstats.gov.zm. However, the ZAMSED was overtaken by newer versions of database software specifically the Zambia info. The Zambia info was more encompassing and included a wider spectrum of national statistics such as agricultural statistics etc.

ZambiaInfo 5.0 is an advanced database management system to keep track of the commitments towards human development. It is endorsed by the UN to report progress towards the Millennium Development Goals

(MDGs). With ZambiaInfo, you are literally a few mouth clicks away from facts that help you to:

- Analyze data for evidence-based decision making
- Undertake results-based monitoring and evaluation
- Link different levels – National, sub national, districts and regional- of
- planning
- Reach out to a large and diverse audience through thematic advocacy

The ZambiaInfo has built on the Devinfo and Childinfo software platforms. It started in the 1990s as ChildInfo, which was a database system used by UNICEF to monitor the World Summit for Children. The ChildInfo database only had children indicators such as infant and child mortality, Child labour, children protection indicators etc. In 2002, UNICEF offered ChildInfo to the UN system as a database system model for monitoring the MDGs. DevInfo is endorsed by United Nations to be used by Member States to monitor human development. It is designed to help monitor the Millennium Development Goals and other national plans of action such as the Fifth National Development Plan (FNDP) and the Vision 2030.

There are three data parameters that define the data value:

1. Indicator
2. Time
3. Area

These parameters help you to query the database and generate a data view. You can prepare a Table, Graph or a Map. You can select the parameters in any sequence and you can also choose and modify at any time.

The Zambiainfo currently exists on CD that are available from the CSO. It can be accessed on the desktop. Migration to the world wide web is imminent.

2.9 Regional Integration and International Technical Assistance received

The National Early Warning System continues to receive considerable support and good will from several international partners and agencies. This regional and International Network enables the NEWS to draw on international expertise and experiences on matters pertaining to Food Security.

FAO-Global Information and Early Warning System (GIEWS)

Provides support for the crop monitoring process. The technical support involves the generation of timely early warning information concerning the state of crop development and use of the software tools such as agro-met shell to generate estimates of expected yields. The support from the GIEWS has been part of the Monthly crop monitoring process that has been ongoing since 2004.

DFID

Has financed most of the activities related to the crop and livestock monitoring process. DFID financed the creation of the crop and livestock database

SADC

SADC has been offering technical & logistical support for generation of Early Warning Information for food security and agriculture statistics. Currently SADC is spearheading the AIMS process that has similar aims and objectives as the CountryStat process. SADC has played a pivotal role in the generation of standardized regional food balance sheets. SADC has provided several training platforms to encourage member states to standardize the generation of food balance sheets and the methodology used for estimation of crop production

USAID-Food Security Research Project

Has provided considerable assistance on the data generation process. USAID through the US bureau of Census provided technical expertise on the design and methodological sampling approaches for the Crop Forecast and Post Harvest Surveys. The support has focused on an improvement in the sample size as well as improvement in the statistical confidence of the resulting estimates. The CFS and

PHS now generate estimates that are relatively more reliable at the district level. Previously, the results had a relatively wide confidence interval at district level. The narrowing of the confidence interval means that district estimates can be included in the CountryStat database.

Support from USAID has also extended to the provision of SPSS software and training for data analysis. This support has been ongoing and is made available on an annual basis as the survey process is undertaken.

3. Outputs, Data sources and Metadata of the Food and Agricultural Statistics

3.1. Crop Statistics

There are three main sources of crop statistics in Zambia. The Crop Forecast Survey, conducted annually in March/April has become the major survey for the generation of agriculture statistics. The current survey has a sample size of 13,600 households in 680 Standard Enumeration Areas. The sample size is designed to provide estimates that are relatively significant at the district level. The CFS survey is a self reporting survey. This means that the enumerator simply asks the household about the various crop and livestock related questions. The enumerator does not directly observe the crops or livestock but relies on the respondents own recall. This differs slightly from the similar surveys conducted in other countries which involve crop cutting and area estimation by the enumerator.

Data entry is done at the provincial headquarters and the entered data and questionnaires transported to Lusaka for data cleaning. Although the CFS collects information on a significant number of variables, only the variables related area, production, fertilizer and anticipated crop sales for all major crops are reported in the final crop tables that a produced in excel. The remaining variables are stored in SPSS and are only used in data manipulation for specific queries made on request.

Meta data on Crop Forecast Survey

Lead Financing Institution: CSO

Participating Institutions: CSO, MACO

Sample size: 13,600 Small and medium scale holdings (less than 20 ha), 100% coverage of large scale holdings
Nature of Sample: Two stage, Probability Proportional to size
Number of standard enumeration areas selected: 680
Number of households per SEA: 20
Non replacement
Variables collected: All aspects of crop production, livestock holding of household, household demographics, marketing information etc
Level of data: Output tables generated at district level, detailed analysis goes up to household and field level
See appendix for sample of output table produced in excel

Post Harvest Survey. The PHS follows exactly the same methodological approach as the CFS. The only difference is that the PHS is supposed to be conducted at the end of the year and involves households recall of actual harvest, not anticipated harvest as is the case for the CFS.

Meta data on Post Harvest Survey
Lead Financing Institution: CSO
Participating Institutions: CSO, MACO
Sample size: 13,600 Small and medium scale holdings (less than 20 ha), 100% coverage of large scale holdings
Nature of Sample: Two stage, Probability Proportional to size
Number of standard enumeration areas selected: 680
Number of households per SEA: 20
Non replacement
Variables collected: All aspects of crop production, livestock holding of household, household demographics, marketing information etc
Level of data: Output tables generated at district level, detailed analysis goes up to household and field level
See appendix for sample of output table produced in excel

Crop Estimates from Extension Staff. MACO also collects estimates from agricultural households using the blocks and camps system. The Ministry has divided districts into agriculture blocks manned by a block extension officer. Each Block has several camps manned by a camp officer. The camp officer is responsible for all extension related activities in his/her work area. The MACO camp officer estimates are supposed to be generated using 100% coverage of all households within the camps. If a camp does not have a camp officer, the block officer is supposed to collect this information for the unmanned camp. The camp officers are expected to collect statistics relating to crop and livestock production their work area. These statistics are then sent to the district for aggregation. In practice, most camp officers actually practice some kind of sampling procedure when selecting which households to collect information from. This system has numerous constraints, chief of which is the lack any empirical method by which to assess the quality of the data. It is not possible to estimate confidence level of data collected using this method. In addition, administrative constraints often mean that some camps and blocks are not manned and this creates serious challenges during aggregation.

Meta data on MACO camp extension staff crop estimate survey

Lead Financing Institution: MACO
Participating Institutions: MACO
Sample size: intention is 100% coverage of small and medium households, large scale holdings not covered
Nature of Sample: census
Number of blocks and camps selected: 100% of manned camps. Unmanned camps are supposed to be covered by block officer. No information on success rate of enumeration of camps
Variables collected: Crop production, livestock holding of household
Level of data: Output tables generated at district level

3.2. Livestock Statistics

Livestock statistics are generated both from the PHS survey and from the agriculture camps on a 100% basis. Both methods have proved to be quite challenging in terms of the quality of the data obtained. The PHS survey has covered the methodological approaches of collecting livestock data using the sample method. The Last livestock Census done on a large sample basis was conducted in 2004 with financial & technical support from FAO and SADC. It is hoped that when LIMS is fully operational there should be an improvement in the quality of livestock statistics. The Department of livestock and Veterinary Development has been undertaking livestock/livestock disease survey from all districts monthly. The LIMS is anticipated to become fully operational in 2010.

This information is collected by the district Veterinary officers and submitted to NALEIC.

Meta data on MACO camp extension staff livestock estimate survey

Lead Financing Institution: MACO

Participating Institutions: MACO

Sample size: intention is 100% coverage of small and medium households, large scale holdings not covered

Nature of Sample: census

Number of blocks and camps selected: 100% of manned camps. Unmanned camps are supposed to be covered by block officer.There is no information on the success rate of enumeration of camps

Variables collected: livestock holding of household

Level of data: Output tables generated at provincial level

3.3. Fisheries Statistics

Data on fisheries is not up to date & is not comprehensive. A small catch assessment survey was recently carried out in 2006 with the assistance of the FAO. CSO in conjunction with the Fisheries department have done frame surveys for almost all the major fisheries in Zambia.

There is need now to conduct Catch Assessment Surveys in these fisheries as well as the creation of a frame that addresses the representation of fish farmers in computing national estimates. Fisheries statistics for GDP estimation does not include small fisheries

3.4. Forestry Statistics

The convention for the estimation of GDP places forestry as part of the agriculture sector. However, the generation of Forestry statistics is the responsibility of the Ministry of Environment, Tourism & Natural Resources. A significant proportion of the data on Forestry statistics is outdated.

3.5. Water Development

Water is key for the promotion of sustainable development in all the sectors of the Zambia economy. In agriculture, water is the primary input for crop, animal and fish production. The availability of quality and affordable safe water can also enhance the socioeconomic development of the farmers. To fully understand the performance of the agriculture sector, some important agro related information from the water sector is essential in planning. Such information includes

- The number of small-scale famers accessing safe and clean water
- The number of water points available (such as dams and weirs) for small scale irrigation and farming
- The performance of the surface water levels in rivers and dams (to help assess the availability for animal and fish production)

Currently there is no regularized way of obtaining this data from the Ministry of Energy and Water Development save for random inquires made from time to time to the ministry. It is important to incorporate, through the National Statistical System (NSS), the provision of agricultural related information from the water sector.

3.6. Land Use

Land is an important resource for agricultural development. The availability of suitable land is an indication of the potential for growth in agricultural development. Information such as types of land uses, size or hectarage that is normally available to

key different socio-economic uses including agriculture is very critical. In agriculture, information on the total arable land (suitable for the production of a broad range of crops, livestock and fish), is largely constant from year to year. This information is available from the Ministry of Lands.

3.7. Population statistics

The Census of Population and Housing is conducted every 10 years. The survey produces estimates of population up to the ward level with projections for a period of 25 years. The population projections are modelled on three HIV/AIDS prevalence scenarios; low, medium and high variant HIV/AIDS. CSO produces a comprehensive set of population projections from the ward up to national level. The projections cover several years. All MACO data computations utilize the CSO population projections using the median variant HIV assumption.

The CIA Fact book and the FAO also report estimates of Zambia's population. CIA fact book estimates tend to be lower than CSO estimates. It is not clear what the source of the CIA estimates for Zambia is. However, FAO estimates are provided by MACO in the form of a written questionnaire which is submitted by both MACO and CSO. The difference between the country estimates and FAO estimates is in how missing values are treated. FAO uses an extrapolation method to fill in missing values whilst MACO and CSO leave missing data blank. No estimation methods to fill in missing data are currently being employed.

The CSO population projections report projects the population under different scenarios; namely with or without HIV and low, medium and high variance. The medium variant with HIV was used in this report. The CSO population estimates tend to be higher than the CIA fact book estimates. However, the advantage of the CSO estimates is that they go down to district level and can thus be comparable to the estimates used by the organizations with regional interventions and projections.

3.8. Trade Statistics

ASYCUDA system

ASYCUDA is a computerized customs management system which covers most foreign trade procedures. The system handles manifests and customs declarations, accounting procedures, and warehousing manifest and suspense procedures. It generates detailed information about foreign trade transactions which can be used for economic analysis and planning. The ASYCUDA software operates on various types of hardware in a client/server environment. Transaction and control data are stored on a relational data base management system. It takes into account all international codes and standards relevant to customs processing as established by ISO, WCO (World Customs Organization) and the United Nations. ASYCUDA can be configured to suit national characteristics such as individual customs regimes, national tariffs, customs regulations and legislation, and after the initial configuration it remains fully flexible so as to adapt to changing customs regimes, regulations and legislation, as required. It also provides for electronic data interchange between traders and customs administrations using UN/EDIFACT rules.[1]
According to the Central Bank, the responsibility for compiling international trade statistics lies with Central Statistical Office (CSO). The major source of trade data is the Automated System for Customs Data (ASYCUDA) system of the Zambia Revenue Authority (ZRA). The CSO publishes international trade statistics in accordance with the Special Trade System (STS). The CSO follows recommendations of the UN "International Trade Statistics Concepts and Definitions" and COMESA Common Statistical Rules and Regulations. All these rules, regulations and practices are built into a statistical software called EUROTRACE used to generate trade statistics. Goods are classified by the Harmonized Commodity Description and Coding System (HS) of the World Trade Council, with seventh and eighth digit extensions for national purposes. Partner countries are classified by the ISO coding established by the UN Statistics Division.

Following the introduction of the ASYCUDA at most of the border entry and exit

[1] www.asycuda.org

points and some inland offices, the data from these stations are transferred electronically to the Central Statistical Office for analysis. The non-computerized stations send third copies of the CED forms to CSO on regular basis, which are then keyed into Eurotrace software. At the end of the month, all data are loaded into a database, validated and processed again using the same software.
Data for Zambia's major mineral exports, copper and cobalt, are currently being obtained from ASYCUDA system of the ZRA. Exports in ASYCUDA data are indicated to be valued FOB. However, there is need for further investigations with ZRA. Data for electricity exports are submitted on a monthly basis by the Zambia Electricity Supply Corporation (ZESCO). Mineral exports and floricultural products are valued at their pre-auction or pre-shipment values. Hence there is need to make valuation adjustment for these exports. However, ZRA states that both traditional and non-traditional exports are on f.o.b. basis.

All imports data are collected from ZRA. Imports are valued on c.i.f. basis. Values expressed in foreign currencies are converted into Zambian Kwacha using the average monthly exchange rate. Shipments without invoice, such as barter and aid goods, and intra-company goods are recorded at the values assessed by Customs officers. Imports are classified by country of origin and exports by country of destination.

The CSO regularly compiles the following trade statistics: Total exports and imports; Trade by harmonized Commodity Description (HS) at eight, six, four and two digit levels; exports and imports by trading partner (direction of trade), exports and imports by port of entry or exit, exports and imports by trader (exporter/importer), international transport statistics (exports and imports by mode of transport and nationality), export and import quantities and weights. Total exports and imports are currently being disseminated in the following publications:

- Quarterly Digest of Statistics produced by the CSO
- Annual Selected Socio-Economic Indicators produced by the CSO
- Annual Economic Report produced by the Ministry of Finance and National Planning

In addition, trade statistics data can also be made available on request as per user specification. Data from ASYCUDA is collected monthly such that monthly, quarterly and annual data are generated. Provisional data are available about one month and some days (extra days are required for editing and cleaning major export and import values and quantities) after the reference year. Currently the "Annual Trade Statistics" publication is not being produced, so that data is disseminated mainly through flash drive, CD and e-mail. The CSO intends to restart the production of the annual publication. The CSO does not have any statement of the methodology used in compiling trade statistics, data to Support Cross-checks and Assurance of Reasonableness.

HS code system

The Harmonized Commodity Description and Coding System (HS) of tariff nomenclature is an internationally standardized system of names and numbers for classifying traded products. The HS is an eight-digit nomenclature. The first four digits are referred to as the heading. The first six digits are known as a subheading. Countries that have adopted the Harmonized System are not permitted to alter in any way the descriptions associated to a heading or a subheading nor can the numerical codes at the four or six digit level be altered.

In order for trade statistics to be comparable from one year to the next, it is important to incorporate the HS code system for international trade. Every item that is imported/exported is assigned a code that is standard among all member countries. When a statistic is quoted, it is important to show the HS code for the relevant item in the appendix. This is to make future comparisons easier on the basis of the HS codes used.

Example of HS Code Description for wheat and related products

HS Code	Description
10011010	Durum wheat - For sowing only
10011090	Durum wheat - Other
10019010	Spelt, common wheat and meslin for sowing only
10019090	Spelt, common wheat and meslin - Other

10081000	Buckwheat
11010000	Wheat or meslin flour
11031100	Groats and meal of wheat
11032100	Wheat pellets
11081100	Wheat starch
11090000	Wheat gluten
19043000	**Prepared foods from bulgur wheat**
23023000	Brans, sharps and other residues of wheat

Source: CSO/ZRA trade data

Informal Cross Border Trade

FEWSNET and WFP do collect informal cross-border trade statistics for maize, beans etc for the SADC region. However, this information does not include formal exports/imports. The advantage of this information is that it is based on actual observations by the data collection staff. The disadvantage of this information is that it only captures quantities and not estimated values of the commodities.

ZEGA

The Zambia Export Growers Association is the main industry association representing the interests of commercial growers and exporters of horticultural products such as fresh flowers and vegetables. The main export market for these commodities are South Africa and the UK.

Production Estimates

The Ministry of Agriculture and Co-operatives in conjunction with the CSO does collect production and other related statistics on all major crops in Zambia. Generally, the ZNFU does not collect agriculture statistics except for specific crops such as wheat, sugar etc that are grown by ZNFU members. Statistics used by organizations such as FAO are obtained from MACO/CSO and 'smoothened' using statistical tools. Data smoothening involves extrapolations or inferences that are made based on the surrounding data points. There are numerous approaches that range from simple averaging of the two closest data points to sophisticated regression type tools.

Consumption Statistics

The main survey in Zambia that collects nationally representative statistics on the consumption of food items is the living conditions monitoring survey. This survey is

conducted every 2 years. The Supplemental survey to the Post harvest survey does collect some consumption statistics but it is a rural representative survey only. Consumption statistics for Zambia are very difficult to generate and in most instances estimates are used based on anecdotal evidence and informed observation.

Consumer Price Index

According to the IMF, The Consumer Price Index (CPI) measures the extent to which retail prices of a fixed basket of goods and services change from month to month. The basic formula used to calculate the CPI is $\frac{Current\ \Pr ice of\ Basket\ of\ Goods}{\Pr ice\ of\ Basket\ of\ Goods\ in 1994} * 100$

The geographical scope and coverage of the CPI in Zambia is national, i.e. both rural and urban areas are covered. The CPI data is collected from retail outlets. The CPI 'basket' consists of 357 products. The base year for the CPI is 1994, based on the 1993/94 household budget survey. No seasonal adjustment is done on the CPI. The CPI software for data entry and data processing is dbase IV. Enumerators collect prices from outlets from 1 – 10th of each month. Prices are collected once per month. The CPI is compiled according to three series, namely:

- Metropolitan Low Income Group: which covers low income households in the highly urbanized areas. Classified by household income, this is the category of urban households in the lower 80 %.

- Metropolitan High Income Group: These are the households in the top 20 % by household income in the highly urbanized cities.

- The Non-Metropolitan group: These are the households in the less urbanized towns. All small towns and rural parts comprise the non-metropolitan group.

In addition, a Composite Consumer Price Index series combining the three groups above is computed. Furthermore, composite main group indices combining the main commodity groups for the three groups are also compiled. The classification system

used for compiling the CPI closely follows the UN COICOP system. The 8 basic commodity groups and the composite commodity weights are:

Food and Beverages 57.1%
Clothing and Footwear 6.8%
Rent and Fuel 8.5%
Furniture and Household goods 8.2%
Medical care 0.8%
Transport and Communication 9.6%
Recreation and Education 4.9%
Other goods and Services 4.1%

The CPI figures are disseminated in the fourth week of the reference month.

4. Overview of User Needs for Food and Agriculture Statistics

4.1 Public Sector Decision Makers

- Robust statistics to provide indicators for monitoring agriculture sector component in FNDP (2006 – 2010)
- Comprehensive data to regularly compile contribution of agriculture to GDP
- Relevant data to track the performance and elevation of farmers
- Information on the quantities and value of agric commodities involved in informal cross border trade. This is especially important to help inform policy on the nation's food security situation. Informal cross border trade often negates the assumptions made about in country availability of food stocks

4.2 Private Sector requires

- Reliable data to guide investment decisions in various agricultural enterprises
- Up to date market data on prices, demand and supply factors and the spatial dynamics of trade
- Need information on potential agricultural export commodities
- Information on the condition of Infrastructure for agriculture trade and investment purposes

5. Expectations from CountryStat and synergies with on-going initiatives

In order for the CountryStat process to have a positive impact, there is need to create synergies between CountryStat and the CSO strategic plan and National Statistical System implementation process. CSO has set out several policy strategies and objectives in its strategic plan. These include;

A number of strategies to meet the objectives have been identified, among them the need to:

- Undertake statistical advocacy programmes as well as to develop and implement a monitoring and evaluation system to assess quality and usage of statistics;

- Advocate for the review of the Statistics Act and revision of statistical standards;

- Develop and implement a human resources development and appraisal system (for instance Annual Performance Appraisal System - APAS);
- Lobby for and mobilize resources (financial, material and human);

- Procure, install and maintain relevant IT infrastructure; and

- Design and implement collaborative statistical programmes, and establish links with collaborative institutions.

A major additional performance indicator of the CountryStat initiative will be the linkage between the current MACO website development and outreach program currently under review

The transfer of data dissemination from the current centralized ad hoc system to a formalized web-based system with internal data management and review policies

that conform to regulations governing the dissemination of Government information will be an added benefit.

Currently, MACO does not have formal protocols that govern the process of transfer official statistics to online end-users. The current protocols involves written letters

In order to ensure the success of some of the relevant strategies outlined in the CSO strategic plan, the CountryStat can provide a forum for the comparison of data generated from the different information collection approaches that currently exist in Zambia. As already stated, there is often a dichotomy of understanding of the role of statistical data collected via a sample survey and administrative data collected as part of routine work on an assumed 100% coverage. By presenting data from various data collection methodologies with a clearly narrated meta data section, the CountryStat portal for Zambia can increasingly be seen as a tool that provides clarification on different available data types.

A 2005 assessment of the Early Warning System in Zambia recommended that 'it is essential that a EWS periodically assess the extent of demand for its products in order to continuously appraise its mandate, design and implementation. The EWS needs to serve multiple client groups who require different kinds of information, analysis and products'. A web based portal managed through the CountryStat process meets this criteria on several levels.

1. The CountryStat process will facilitate the dissemination of information packaged in a standardized format to multiple clients

2. The CountryStat format will offer a platform for receiving feedback from clients who are not geographically located in Lusaka. This will be very helpful in improving the usability of information for remote users

3. Having a central repository for information will increase the demand for more statistical data. Users are more likely to demand more information when relatively consistent data is made available

4. The CountryStat process is expected to strengthen capacity both human and non human for effective generation of food & agriculture statistics

5. Fill the gaps left by on-going programmes & initiatives

6. Provide a platform for reaching consensus on methodological issues in the estimation of relevant statistics

7. Facilitate technical backstopping & financial resource mobilisation

The National Statistical Development System (NSDS) is designed to be an all-embracing platform for the improvement of the dissemination of statistics in Zambia.

6. Important factors for the success of the CountryStat project

The CountryStat process requires considerable 'buy in' from stakeholders in order to ensure its success. This can be achieved through

1. Increased publicity of the CountryStat process itself. Information on what the project aims to achieve, its outputs and scope of statistics covered needs to be widely shared with users

2. The meta data for all the information shared on the CountryStat portal must be made available. There is sometimes more than one source of information on the same set of statistics and this needs to be made known to users

3. A regimented and publicized programme of periodically updating the information on the CountryStat portal must be undertaken. This will ensure that users are encouraged to make repeat visits to the site

4. Diversification of data content over time is also critical. This will ensure that the growth in the appreciation for the site is matched by an anticipation of more data to be made available on the site. Zambia currently has very little consumption statistics available. The successful implementation of the dissemination of production related statistics, which are relatively more widely available, should stimulate the demand for consumption related statistics

5. It is also critical to promote dialogue between users and producers of information. This will also act to open up new areas requiring the generation of relevant and usable statistics

There are considerable constraints that must be overcome if the climate of the generation, use and appreciation of agriculture statistics is to improve in Zambia

I. Institutional Constraints due to the absence of effective inter-sectoral and cross-ministerial linkages. This tends to frustrate efforts to promote sharing of data collection tasks and information. There is often a focus on the collection and analysis of data that is specific to particular units without consideration for bigger picture issues. In addition, there is a lack of attention to issues of compatibility of data collected, periodicity, spatial coverage, sample selection, selection of indicators, and data management issues. Duplication of data collection efforts is not uncommon

II. Technical Constraints resulting from lack of the lack of trained manpower to manage complex information systems. There is often a lack of the necessary skills to conduct multi-sectoral analysis of the kind required to manage food security issues

III. Financial Constraints significantly reduce the efficient and effective operation of information systems, in particular the collection and analysis of primary data and other information at the sub-national or household level. As a consequence, surveys may not be conducted on time or at the optimum frequency, with compromises on the sample size

Recommendations

I. The FAO Country office must recognize and communicate directly with designated technical focal points on all CountryStat correspondence and issues not only with the Government administrative structures. This will help to overcome the bureaucratic delays that are normally experienced in Government communication

II. There is need for advocacy for effective in country and other types of training including Long term training. An increased focus on policy analysis based on advanced statistical modeling and other quantitative tools should be a follow-up to the CountryStat process

Challenges

The coding system for crops and plant materials has not been standardized. There is need for Zambia to create consensus amongst the key stakeholders on a harmonized set of crop codes to be used in the database. This constraint is being addressed through the setting up of a comprehensive set of classification codes for all Zambian crops and plant materials.

Competing interests often result in a distortion of information especially for self reported statistics, e.g. the Ginners association versus the regulatory body for the cotton industry. Other examples include the dichotomy between the millers on one hand and the farmers union on the other. These bodies may sometimes present different statistical positions on important issues which have a policy implication such as the National Stock position for maize, etc.

There are several increasingly important crops for which statistics are non existent. Examples include. Bananas and other fruit which provide a very important source of energy for the urban population. Difficulties in collecting these statistics relate to the challenge of stratification of sample frame. Broadly speaking, statistics that are predominantly based on an urban agricultural population are very difficult to obtain due to the non existence of a specifically urban agriculture sampling frame. As an example, the broiler chicken market has grown considerably among urban households. Although statistics can be obtained from the companies that sell day old chicks, these statistics would include the considerable amount of informal exports of day old chicks to neighbouring countries.

7. Annexes

Harmonization of FAO Crop Codes with Zambia Codes

Zambia has a list of crop codes that are used in the annual joint Crop Forecast and Post Harvest Surveys. The list of crop codes is only as extensive as the main number of crops that are reported on in the surveys. Periodically, additions are made to the list of crops to be included in the surveys. Conversely, some crops that are no longer widely grown, such as Kenaf, are removed from the survey.

There are currently no standards of how to handle code allocation to new entrant crops or whether to re-assign codes for crops that are removed from the survey. Harmonization of the MACO/CSO codes in line with the FAO codes will create a somewhat more permanent coding structure.

The following principles and guidelines were adopted and used in generating the Zambia crop codes

1. Existing crop codes based on the Crop Forecast and Post Harvest Surveys were used as the starting point for creating Zambia crop codes. If a Zambia crop code exists, then it has been used with the addition of a three digit series range. E.g. cabbage is code 34 in the CFS. However it has been listed under the 300 series range. Therefore the new Zambia code for cabbage is 300+34=334.

2. The Zambia crop codes to be harmonized with the FAO crop codes will be 3 digit starting with the 100 series (cereals)

3. The Zambian crop codes have as much as possible, approximated the series range from the FAO codes, e.g. if maize in the FAO codes is 111 then the Zambia codes will as much as possible maintain maize in the 100's range. However, the Zambia crop code itself may be quite different from the FAO codes

4. Only crops currently listed in the CFS have been coded. A comprehensive coding process will take place in consultation with CSO and other stakeholders, after which all the other FAO listed crops will be coded

Range of Seed varieties by Company currently approved by the SCCI

Maize

68 = Local maize
69 = Hybrid maize - non specific
70 = Recycled hybrid maize
71 = OPV maize

ZAMSEED
1 = Pool 16 (OP)
19 = GV 61 Yellow
6 = GV 408
3 = GV 412
5 = GV 470
12 = GV 512
13 = GV 607
14 = GV 702
15 = GV 703
18 = GV 704
16 = GV 722
4 = MM 441
7 = MM 501
8 = MM 502
9 = MM 601
10 = MM 603
11 = MM 604
177=MM 606
17 = MM 752
2 = MMV 400 (OP)
178= MMV 600 (OP)
141 = ZMS 402
179= ZMS 510
180= ZMS 528
181= ZMS 602
142 = ZMS 606
143 = ZMS 607
182= ZMS 616
144 = ZMS 737
145 = ZMV 600

ZARI-MACO
146 = ZM 421
147 = ZM 521 (OP)
148 = ZM 621

AFGRI Cooperation
183= AFRIC 1 (OP)
184 = AFG 4611
185 = AFG 4663

Maize (cont'd)

PANNAR
186=PAN 4M – 17
187=PAN 4M – 19
188=PAN 6M – 55
152 = PAN 7M – 97
189=PAN 8M – 91
190=PAN 8M - 95
31 = PAN 14 (Y)
191=PAN 53
192=PAN 57
29 = PAN 61
24 = PAN 64
22 = PAN 67 - African Queen
153 = PAN 69
149 = PAN 77
26 = PAN 87
193=PAN 413
150 = PAN 5503
151 = PAN 6017
23 = PAN 6243 - in a class of its own
20 = PAN 6363 - Chipolopolo
25 = PAN 6479
21 = PAN 6549 - Mr. Reliable
27 = PAN 6573
28 = PAN 6777
30 = PAN 6823
154 = PAN 6966 (Y)

MRI
194=MRI EP (OP)
195=MRI MP (OP)
196=MRI 404
67 = MRI 455
66 = MRI 514
157 = MRI 534
65 = MRI 594
63 = MRI 611
64 = MRI 614
62 = MRI 624
61 = MRI 634
158 = MRI 644
60 = MRI 651 (Y)
159 = MRI 694
197= MRI 704
161 = MRI 711 (Y)
160 = MRI 714
57 = MRI 724
59 = MRI 734
58 = MRI 744

Maize (cont'd)

SEED-CO
56 = SC 206 (Y)
47 = SC 401
48 = SC 403
49 = SC 405
50 = SC 407
198=SC 411
42 = SC 501
55 = SC 506 (Y)
44 = SC 513
43 = SC 515
45 = SC 517
46 = SC 521
199=SC 525
40 = SC 601
53 = SC 602 (Y)
54 = SC 604 (Y)
41 = SC 621
39 = SC 625
38 = SC 627
155 = SC 633
200=SC 637
36 = SC 701
51 = SC 704 (Y)
52 = SC 706 (Y)
37 = SC 707
32 = SC 709
35 = SC 711
33 = SC 713
34 = SC 715
201=SC 719

Progene Seeds
202=PGS 53

Monsanto
203=DK 8031
204=DK 8051
205=DK 8071
206=DKC 8033
207=DKC 8053
208=DKC 8073

Sorghum

81 = Local sorghum
82 = Hybrid sorghum
83 = Recycle hybrid sorghum
84 = OPV sorghum

ZAMSEED
75 = KUYUMA
76 = SIMA
77 = ZSV 15
78 = WP 13
162 = MMSH 375
163 = MMSH 413

SEED-CO
79 = MACIA (OP - white)
80 = NS5511 (Hybrid - brown)

Sunflower

90 = Local sunflower
91 = Hybrid sunflower
92 = Recycled hybrid sunflower
93 = OPV sunflower

ZAMSEED
85 = MILIKA
86 = RECORD

PANNAR
87 = PAN 7369
88 = PAN 7353
89 = PAN 7351

Groundnuts

99 = Local groundnuts
100 = Hybrid groundnuts
101 = Recycled hybrid groundnuts
102 = OPV groundnuts

ZAMSEED
94 = CHIPEGO
95 = MGV-4
96 = CHALIMBANA
164 = FLAMINGO

SEED-CO
97 = FLAMINGO
98 = NYANDA

Soyabeans

109 = Local soyabeans
110 = Hybrid soyabeans
111 = Recycled hybrid soyabeans
112 = OPV soyabeans

ZAMSEED
103 = KELEYA
104 = MAGOYE
165 = HERNON-147

MRI
166 = DINA
167 = MILA

SEED-CO
105 = STORM
106 = SOLITAIRE
107 = SOPRANO
108 = SAFARI

Cowpeas

115 = Local cowpeas
116 = Hybrid cowpeas
117 = Recycled hybrid cowpeas
118 = OPV cowpeas

ZAMSEED
113 = LUTEMBWE
114 = BUBEBE

Tobacco

BURLEY
119=Bunckett
120=BO 1
121=BO 2
122=BO 3
123=A 1
124=A 2
125=A3

VIRGINIA
126=HG
127=T26
128=RK326
129=T29

Cotton

130= F135
131= Chureza
132= Ngwezi
133= CDT 1

Sweet Potatoes

300 = Chingovwa
301 = Mulungushi
302 = Lukulu
303 = Kalungwishi
304 = Lunga
305 = Zambezi
306 = other improved varieties
307 = local sweet potato varieties

Other crops not listed

134= Local
135=Improved

SEED COMPANIES
136= ZAMSEED
137= PANNAR
138= SEED-CO
139= MRI
209= AFGRI Coop
210= MONSANTO
211= PROGENE SEEDS
212= PIONEER
213= KAMANO
214= OTHER COMPANY

140 = Do not know

CONVERSION TABLES DEVELOPED BY FSRP/MACO/CSO TO Kgs

These crop conversion codes are used for the CFS, PHS and Supplemental surveys

Maize (1)

	Kgs
90kg bag	103
50kg bag	57
25kg bag	29
10 kg Pocket	10
20 lt. tin	17.4

Rice (3)

Unit	Kgs
90Kg bag	180
50kg bag	100
25kg bag	50
10kg packet	10
20 lt tin	30
90kg bag (unpolished)	85
50kg bag (unpolished)	47
25kg bag (unpolished)	23
20 lt. tin	14

Sorghum (2)

Unit	Kgs
90kg bag	98
50kg bag	54
25kg bag	27
10kg bag	10
20 lt. tin	16.36
90kg bag (unthreshed)	36
50kg bag (unthreshed)	20
25kg bag (unthreshed)	10.8
20kg tin (unthreshed)	4.09

Millet (4)

Unit	Kgs
90kg bag	99
50kg bag	55
25kg bag	28
10kg bag	10
20lt.tin	16.43
90kg bag (unthreshed)	40
50kg bag (unthreshed)	22
25kg bag (unthreshed)	11.2
20 lt. tin (unthreshed)	6.67

Sunflower (5)

Unit	Kgs
90kg bag	50
50kg bag	28
25kg bag	14
10kg bag	5.56
20 lt. tin	8.33

Mixed Beans (12)

Unit	Kgs
90kg bag	108
50kg bag	60
25kg bag	30
10kg bag	10
20 lt. tin	18.05

CONVERSION TABLE TO Kgs CONTINUED

Groundnuts (6)

Unit	Kgs
90kg bag	95
50kg bag	53
25kg bag	26
10kg bag	10.56
20 lt. tin	15.8
90kg bag (unshelled)	38
50kg bag (unshelled)	21
25kg bag (unshelled)	10
20 lt. tin (unshelled)	6.4

Cow Peas (14)

Unit	Kgs
90kg bag	108
50kg bag	60
25kg bag	30
10kg bag	10
20 lt.tin	18.05

Soya Beans (7)

Unit	Kgs
90kg bag	90
50kg bag	50
25kg bag	25
10kg bag	10
20lt. tin	15

Sweet Potatoes (17)

Unit	Kgs
90kg bag	104
50kg bag	58
25kg bag	29
10kg bag	10
20 lt.tin	17.5