



Global Strategy
IMPROVING AG-STATISTICS

DRAFT

Improving Statistics for Food Security,
Sustainable Agriculture and Rural Development

**AN ACTION PLAN TO IMPLEMENT
THE GLOBAL STRATEGY**



CONTENTS

Preface

Acknowledgments

Abbreviations

Executive Summary

1 Goals and Purposes of the Global Action Plan

Goals, Outcomes, and Main Outputs of the Global Action Plan
Implementation: An Overview

2 Global, Regional, and National Governance

Governance Structure

Global Governance Framework

Regional Governance Framework

National Governance Framework

Implementation at the Global, Regional, and National Levels

Initial Activities for Immediate Implementation

3 Interdependent Linkages of Components of the Global Action Plan

Need for Country Assessments, Technical Assistance, Training, and Research
The Technical Components and Their Interlinks

4 Country Assessments

First Stage

Second Stage

5 Technical Assistance Plan

All Pillars

Pillar I: Ensuring a Minimum Set of Core Data

Pillar II: Integration of Agriculture into the National Statistical System

Pillar III: Sustainability of the Statistical System through Governance and Statistical
Capacity Building

6 Training Plan

Global Responsibilities

Regional Responsibilities

Country Responsibilities

7 Research Plan

Research Topics

Implementation of the Research Plan

8 Process to Implement the Global Strategy, Indicative Budget, and Timeline

Process to Implement the Global Strategy
Indicative Budget for the Global Action Plan
Funding Strategy
Indicative Timeline

9 Implementation, Monitoring, Evaluation, and Reporting

Appendixes

- A Minimum Set of Core Data
- B Stakeholder Analysis for Agricultural Statistical Systems
- C Relationship between the thematic domains, the research topics and the pillars of the Global Strategy
- D Topics Requiring Limited Resources to Produce Highly Needed Technical Guidelines for Immediate Implementation (Quick Wins)
- E Outputs of the Research Plan and Corresponding Activities
- F Detailed Governance Framework
- G. Global Action Plan Results-Based Logical Framework

References

Preface

The recent food crisis and the ongoing debates on food price volatility, the impact of climate change on agriculture, and food security highlight clearly the weaknesses in the available agricultural data and the urgent need for evidence on which to implement relevant and effective policies at the global, regional, and national levels. These data requirements are emerging at the same time that many countries, especially in the developing world, lack the capacity to produce and report even the minimum set of agricultural data needed to monitor national trends or inform the international development debate.

The Global Strategy to Improve Agricultural and Rural Statistics (World Bank, FAO, et al. 2011) is a ground-breaking effort to strengthen agricultural statistics. Development of the Global Strategy, which was initiated by the United Nations Statistical Commission (UNSC), is the result of an extensive consultation process with national and international statistical organizations as well as national statistics offices, agricultural ministries, and the other governmental institutions producing statistics that fall under its scope. The Global Strategy is a framework for national and international statistical systems that will enable them to produce, and to apply, the basic data and information needed in the 21st century.

At its 41st session in February 2010, the UNSC endorsed the technical content and the strategic directions of the Global Strategy. It also urged the rapid development of an action plan for implementation that would begin with a detailed assessment of each country's statistical capacity. The action plan was to provide a comprehensive technical assistance and training program and also contain a well-targeted research agenda to deal with unsolved methodological issues and the implementation of the statistical methodology required by the strategy.

A worldwide consultation on the first drafts of the Global and African Action Plans (preparation of the Global Action Plan was carried out in parallel with development of the African Action Plan) held at the Fifth International Conference on Agricultural Statistics (ICAS-V) in Kampala, Uganda, October 13–15, 2010. It was attended by about 300 senior experts from 77 countries. There, technical sessions focused on the country assessment framework, technical assistance and training programs, the methodological research agenda, and the governance mechanisms at global, regional, and national levels.

A Roundtable Meeting of Donors held during ICAS-V resulted in strong support for the Global Action Plan by the donors present, who expressed a willingness to consider funding for its implementation. Several activities have also been undertaken to involve regional partners in the global plan, including the UN Economic and Social Commission for Asia and the Pacific (ESCAP), Asian Development Bank, UN Economic and Social Commission for Latin America and the Caribbean (ECLAC), Inter-American Development Bank, UN Economic and Social Commission for Western Asia (ESCWA), Islamic Development Bank, and Interstate Statistical Committee of the Commonwealth of Independent States (CISSTAT) in close collaboration with the regional offices of the Food and Agriculture Organization of the United Nations (FAO).

A progress report on the preparation of the Global Action Plan was presented to the 42nd Session of the UNSC in February 2011. The action plan was also presented at the 37th Session of the FAO Conference, June 25–July 2, 2011, and received strong support from FAO member countries and institutions. At their meeting in Paris, June 22–23, 2011, the agricultural ministers of the G20 adopted an Action Plan on Food Price Volatility and Agriculture, which states that the ministers of the G20 “support the Global Strategy to Improve Agriculture and Rural Statistics and invite international organizations to create synergies between this Global Strategy and AMIS (Agricultural Marketing Information System)” (Group of 20, 2011).

The implementation of the Global Strategy will take into account lessons learned from decades of technical cooperation. In particular, it will be aligned with the international consensus on the new approach to capacity development grounded in the five principles of the Paris Declaration on Aid Effectiveness (OECD 2005) and the Accra Agenda for Action (OECD 2008).

The new approach to capacity development calls for a systemic perspective that addresses three dimensions: (1) enhancing individual technical capacity; (2) strengthening institutions and organizations; and (3) creating an enabling environment instead of focusing only on a single aspect (FAO 2010a). It also recommends embracing flexible planning to adapt to specific country contexts, supporting national processes of knowledge creation instead of knowledge transfer, supporting national staff instead of hiring external consultants to undertake activities, and applying a long-term perspective instead of quick fixes (FAO 2010a).

The Global Action Plan provides the global framework and governance structure that will lead to the establishment of improved national statistical systems, supported by global and regional coordinated statistical capacity-building efforts through technical assistance, training, and research. The action plan takes into account that other statistical capacity-building and development activities are already under way in many countries, and in those cases the efforts will be coordinated. Moreover, the action plan foresees synergies and complementarity with other initiatives, such as the Agricultural Market Information System (AMIS) recently adopted by the G20 ministerial meeting. AMIS focuses more on a limited number of data items for selected food crops related to monitoring Global Food Market, mainly in the G20 countries and few developing countries. The Global Strategy on the other hand concentrates on long term statistical capacity building in developing countries for key basic food and agricultural statistics.

As noted, preparation of the Global Action Plan has been carried out in parallel with development of the African Plan. Africa is the first region to initiate the implementation of the Global Strategy, and it has done so by putting in place a well-developed plan. A conference of the main stakeholders held at FAO in Rome in September 2010 served as one source of input for the African Plan. It is recognized that not every region will develop a detailed implementation plan similar to Africa’s, but rather a regional activity program based on the Global Action Plan. Therefore, the Global Action Plan defines the steps to be taken and the overall responsibilities at the global, regional, and national levels, with the understanding that each region will need different levels of support. The requirements spelled out in the global plan are in harmony with those in the African Plan.

Implementation of the Global Action Plan will be country-driven. Therefore, the focus of the following plan is on the technical and training support to be made available.

Organization of This Report

This report begins with a description in chapter 1 of the purpose and goals of the Global Action Plan. Chapter 2 provides the proposed global, regional, and national governance structures, and then the report moves in chapter 3 to a review of the interdependent linkages of the technical components of the action plan, which are described in more detail in chapters 4–7 (the country assessments, the technical assistance plan, the training plan, and the research plan, respectively). Chapter 8 outlines the process, timeline, and assessment of resources that will be required for technical assistance, training, and research to implement the Global Strategy. The report concludes in chapter 9 with an overview of the implementation procedures and the monitoring, evaluation, and reporting requirements.

Seven appendixes complement the report. Appendix A provides the minimum set of core data from the Global Strategy. Appendix B is an analysis of the stakeholders' requirements, which reinforce the goal that implementation of the action plan will ensure that users' needs are met. Appendix C describes the relationship between the thematic domains, the research topics and the pillars of the Global Strategy. Appendix D is a listing of technical assistance and research activities already started and requiring limited resources to produce highly needed technical guidelines (quick wins). The outputs of the research plan and corresponding activities are listed in appendix E. Appendix F describes in detail the governance framework. Finally, appendix G is the results-based logical framework of the action plan showing performance indicators, risks, and mitigation measures.

ACKNOWLEDGEMENTS

The Global Action Plan to implement the Global Strategy to Improve Agricultural and Rural Statistics was prepared by the Food and Agriculture Organization of the United Nations (FAO) and the World Bank in collaboration with the United Nations Statistical Commission (UNSC) Friends of the Chair working group and in consultation with stakeholders.

The FAO team worked under the supervision of Pietro Gennari, Director Statistics Division. The team was led by Naman Keita and included Elisabetta Carfagna (main contributor), Mukesh Srivastava, Nancy Chin, and Georgi Kvinikadze. The FAO team was supported by Trang Nguyen.

The World Bank team worked under the supervision of Grant Cameron, manager, and Misha Belkindas, senior adviser. The team was led by Naoko Watanabe and Fred Vogel (main contributor). Important technical inputs were provided by consultants David Marshall, Miguel Galmes, and Tomas Africa.

The Friends of the Chair¹ of the UNSC on Agricultural Statistics, led by Eduardo Nunes, provided input from a national perspective. And the following peer reviewers kindly offered comments: Hans Binsvanger, Adrian Bug, Gero Carletto, Cynthia Clark, Sanjiva Cooke, Graham Eele, Babakar Fall, Salvatore Favazza, Nancy Morgan, Nwanze Okidegbe, and Romeo Recide.

Preparation of the Global Action Plan was supported by the Trust Fund for Statistical Capacity Building (TFSCB), a multidonor trust fund financed by Canada, the Netherlands, and the United Kingdom, and administered by the Development Data Group of the World Bank.

¹ The Friends of the Chair Group on Agricultural Statistics is led by Brazil and includes Australia, China, Cuba, Ethiopia, Italy, Morocco, the Philippines, the Russian Federation, Trinidad and Tobago, Uganda and the United States of America. Eurostat and the World Bank participate as observers, while FAO and the United Nations Statistics Division serve as secretariat.

ABBREVIATIONS

CAPI	computer-assisted personal interviewing
FAO	Food and Agriculture Organization of the United Nations
GDP	gross domestic product
GIS	geographic information systems
GPS	global positioning system
ICAS-V	Fifth International Conference on Agricultural Statistics
IMF	International Monetary Fund
JRC	Joint Research Centre (European Commission)
LSMS	Living Standard Measurement Study
M&E	monitoring and evaluation
MDG	Millennium Development Goal
NSDS	National Strategy for the Development of Statistics
NSO	national statistics office
OECD	Organisation for Economic Co-operation and Development
PARIS21	Partnership in Statistics for Development in the 21st Century
PDA	personal data assistant
SSPARS	Sector Strategic Plan for Agricultural and Rural Statistics
UNSC	United Nations Statistical Commission

Executive Summary

Because three out of four poor people in developing countries live in rural areas, agricultural development is vital to achieving the Millennium Development Goals (MDGs) related to poverty, food security, and the environment. Today, the commitment to these goals has taken on growing urgency in the global context of the skyrocketing food prices and falling food reserves caused by droughts, higher oil prices, and the use of food products to produce biofuels. Meanwhile, over the last two decades the quantity and quality of agricultural statistics have undergone a serious decline. Many countries, especially in the developing world, lack the capacity to produce and report even the minimum set of agricultural statistics to monitor national trends. One reason the number of countries capable of providing these data has declined is the lack of a capability to provide meaningful analysis of the existing data.

The Global Strategy to Improve Agricultural and Rural Statistics provides the framework needed to meet the current and emerging data requirements and the demands of policy makers and other data users so that they can meet these urgent needs. The conceptual framework presented in the Global Strategy brings together the economic, environmental, and social dimensions of agriculture to monitor how the well-being of households is determined by the productivity of agriculture, the land they use, and the environment they share.

At its 41st session, the UNSC endorsed the Global Strategy. It urged the development of an action plan that would begin with a detailed assessment of each country's statistical capacity. The UNSC also directed that the action plan provide technical assistance and training programs for building statistical capacity and a research agenda to deal with unsolved methodological issues.

The goal of the Global Action Plan is to contribute to greater food security, reduced food price volatility, and improved income and well-being of rural populations through evidence-based policies in line with the first Millennium Development Goal: "Eradicate extreme poverty and hunger." In addition, improved policies will contribute to the sustainable use of land and water resources and the adaptation of agricultural activities to climate change to meet the challenges of MDG 7: "Ensure environmental sustainability."

The Global Action Plan provides the framework needed to rebuild a sustainable national statistical capacity to produce agricultural statistics and increase their use for better policy decisions. It also supports implementation of the methodology required to produce statistics to meet emerging data requirements and help restore the international support system for agricultural statistics.

The action plan is centered on the three pillars of the Global Strategy: (1) provide a minimum set of core data; (2) integrate agriculture into the national statistical system; and (3) ensure the sustainability of the statistical system through governance and statistical capacity building.

The first pillar—a minimum set of core data—is based on the assumption that it is not possible to meet every data requirement every year. For example, the FAO database includes over 150 crop items. However, the Global Strategy includes only eight as core data items. These items account for a major proportion of land use, food supplies, and value added from agriculture. Although the Global Strategy defines the core items, each country will work with data users and the principles outlined in the strategy to determine its minimum set. A most important concept underlying the minimum set of core data is that the data be collected in a

way that allows cross-cutting data analysis to examine the linkages between policy decisions and the resulting outcomes.

The Global Strategy recognizes that a serious shortcoming of the current statistical systems in developing and many developed countries is that data are collected by sector using different sampling frames and surveys. Crop surveys are separate from livestock surveys, and both are separate from household surveys. In many countries, agricultural statistics are produced by the ministry of agriculture and may differ from those coming from the national statistics office. It is difficult, then, if not impossible to gauge how a policy decision in one sector will affect the other sectors. It is for these reasons that the second pillar of the Global Strategy calls for the integration of agriculture into the national statistical system. The strategy points out that the integrated survey system needs to allow the linkage between the farm as an economic unit and the household as a social unit, and both with the land they use.

The third pillar of the Global Strategy is the governance framework that will support the integration of agriculture into the national statistical system by bringing together the multiple organizations that produce agricultural and rural statistics. The Global Strategy describes the framework for integration that builds off the strengths of each organization and provides a common focus on the data requirements for agricultural statistics. The third pillar also defines the statistical capacity requirements to implement the Global Strategy and to ensure that a sustainable system is put into place.

The main elements of the Global Action Plan are governance; technical components (country assessments, technical assistance, training, and research) and implementation of the Global Strategy. The technical components are interlinked and well articulated to form a consistent capacity-development program. A summary of each component of the action plan follows.

Governance

The Global Action Plan introduces a governance structure that has three levels: global, regional, and national:

- *Global*—*The Global Steering Committee (GSC)* will provide strategic guidance and oversight and will act as the ultimate decision-making body for implementation of the action plan. *The Global Executive Board (GEB)* is a subgroup of the GSC, with delegated authority from the GSC to act on its behalf in the interim period between meetings. Its role is to provide policy direction, guidance and accountability to the day-to-day work of the *Global Office*, which is being established within FAO's Statistics Division. The *Global Office* will develop and provide statistical standards and guidelines to support technical assistance and training. It will also implement the research agenda to develop advanced and cost-effective methodologies and tools. *The Inter-Agency and Expert Group on Agricultural and Rural Statistics* will guide methodological developments in statistics for food security, sustainable agriculture, and rural development.
- *Regional*—*The Regional Steering Committee (RSC)* is the decision making body at regional level and will provide guidance and oversight for the implementation of the regional and country activities defined in the Regional Plan. The RSC will assess country proposals and prioritize the use of the funds among countries. *The Regional Executive Board (REB)* is a sub-group of the RSC from which it will receive delegated authority to oversee the execution of the decisions. In particular, it will provide policy direction to the

implementation of the Regional Plan. *The Regional Office* will provide the integrated national statistical systems with direct training and technical assistance.

- *National—The national coordinating body.* Governance at the national level requires organizing a national statistical system that brings together the national statistics offices, sector ministries, and other agencies that provide data within the scope of the Global Strategy. The national coordinating body, to be built on the existing national structure, will set priorities and oversee in-country activities and establish and maintain communications with stakeholders. The national coordinators will also determine the methodology and work plan they will adopt to implement the strategy.

Appendix F describes in detail the governance framework.

The responsibilities for each level to conduct the country assessments and implement the technical assistance, training, and research components within the framework of the National Strategies for the Development of Statistics (NSDS) and the Sector Strategic Plans for Agricultural and Rural Statistics (SSPARS) are described below.

Country Assessments

This effort begins with the preparation of a questionnaire and accompanying guidelines so that each country can provide an assessment of its statistical capabilities, including the data currently provided by source, frequency, and indications of quality. A subsequent, more in-depth assessment determines the national capability to produce the minimum set of core data on a sustainable basis, and in the longer term provides the capability for analysis across the economic, social, and environmental domains. On the basis of the country assessment, countries will prepare country proposals, driven by their own needs, to be submitted to the Regional Steering Committees for accessing funds raised for implementing the Global Strategy. Country proposals may include developing or updating the sectoral (SSPARS) component of the NSDS to facilitate integration of agricultural statistics into the national statistical system, to guide implementation, and to determine the requirements for technical assistance and training.

Technical Assistance

Technical assistance will be available in key areas, depending on each country's capabilities. The starting point will be technical assistance with the country assessments and guidance with the development or update of the sector strategic plans to produce the minimum set of core data. Technical assistance will include support and guidance for establishing the governance structure to integrate agriculture into the national statistical system, promoting the national statistical system, determining the methodology to be used, and undertaking overall implementation. The documentation of statistical standards and guidelines to support in-country technical assistance are an important element as well.

The technical assistance should be coordinated at the regional and global levels to ensure consistent methods are used, resulting in internationally comparable output. In addition, those offering technical assistance should be mindful of other development activities that may already be under way.

Training

Those involved in the training component face the need to improve the statistical capacity in many countries before they can move on to implement the methodology described in the

Global Strategy. The different levels of core skills needed to produce official statistics will be defined and translated into theoretical and practical knowledge requirements to be met by training. The documentation of the statistical standards and guidelines described earlier will be used to prepare training materials, especially using e-learning tools. Curricula will be developed to enable regional centers to provide training on the more advanced topics such as sample design, estimation, and the use of new technologies. Training for agricultural statistics will have to be integrated with other sectors of the national statistical system. The training component will include a segment that will prepare managers to better explain to data users how they can use the information provided.

Research

The Global Strategy recognizes the problems faced by developing countries in estimating agricultural production. For example, small holdings and multi-cropping practices pose problems for measuring crop areas and production. Crop cutting methods are difficult to apply to root crops. In addition, the conceptual framework for agricultural statistics calls for linking the farm, household, and land use, which points to the need to establish a sampling frame using new methodologies such as geo-referenced census records to land use using remote sensing products. The Global Strategy also presents an opportunity to take advantage of the digital revolution and make use of other new technologies such as global positioning systems (GPS), personal data assistant (PDA) etc. The methodologies for some of these areas have been developed; the problem is determining how to apply them in developing countries. Therefore, the effort will focus on improving the cost-efficiency of these methodologies and on adapting them to the specificities of developing countries rather than developing research capacity in each country.

Implementation

The Global Action Plan takes into account lessons learned from decades of technical cooperation. In particular, it will be aligned with the international consensus on the new approach to capacity development grounded in the five principles of the Paris Declaration on Aid Effectiveness (OECD 2005) and the Accra Agenda for Action (OECD 2008). It recognizes that the top-down approach adopted in the past for capacity building did not achieve the intended goals. The plan will be country-driven with a *detailed assessment* of countries' agricultural statistics systems as the starting point and basis for the formulation of country proposals, with priorities identified by countries to ensure *ownership*. The plan adopts a long-term perspective and promotes the *predictability of resources* through the establishment of a trust fund to support global, regional, and national activities. The Funding Strategy encompasses also other types of resources like bilateral agreements and in-kind contribution.

At the global level, the preparation of technical standards and guidelines to support the technical assistance and training programs can begin. Work on the priority elements of the research agenda and pilot testing of methodologies needed to meet the emerging data requirements can be initiated as well. These two elements are critical in ensuring the successful, cost-effective implementation of the strategy.

At the country level, the overall implementation will be under the auspices of the NSDS and the accompanying SSPARS. The first step for each country is to begin the country assessment and prepare a country proposal that contains the steps it will follow to develop or update its SSPARS and the technical assistance and training it will need to do so. The sector strategic

plans will be the main tool for implementation of the Global Strategy at the national level, supported by technical assistance and training. Some countries will already have sector strategic plans in place that only have to be revised to meet the requirements of the Global Strategy. Those without sector strategic plans can receive technical assistance for developing their sector strategic plans as modules of the NSDS.

The Global Action Plan recognizes that the statistical capacity of countries will range from those already providing the set of core data from an integrated statistical system to those that essentially have no system in place. In between are the countries that are at various stages of statistical capacity and whose requirements for technical assistance and training will likewise vary. A small subset of countries in various stages of development will be targeted to begin implementation. This pilot effort will provide the experience needed to determine how other countries should proceed.

Finally, this report provides an indicative budget that reflects the effort to implement the country assessment, technical assistance, training, and research components that will support implementation of the Global Strategy. Although the Global Action Plan fosters sustainability of the agricultural statistical systems in the long run, significant external support and funding will initially be required to begin the process. It should be also noted that the focus of the Action Plan is on Capacity Development and not on funding actual data collection activities such as censuses, surveys etc. Therefore, additional funding from countries and Partners is critical for supporting these data production activities. The Plan has a target of 90 countries to be supported during the next five years (Phase 1).

Chapter 1

Goals and Purposes of the Global Action Plan

The recent food price crises have been accompanied by growing concerns about the effects of agriculture on the environment and issues related to climate change. At the same time, the quality and availability of agricultural statistics have seriously declined.

Agriculture is the primary source of food, clothing, and the materials used for fuel and housing for a growing world population. The challenge is to lift millions of people out of poverty and hunger, reduce the impact of agriculture on the environment and global warming, and sustain water and land resources. Three out of four poor people in developing countries live in rural areas, and most depend directly or indirectly on agriculture for their livelihoods. According to the *World Development Report* (World Bank 2008), agriculture is recognized as a vital development tool for achieving the Millennium Development Goals (MDGs), and especially for contributing to food security, raising the incomes of the poor, facilitating economic transformation, and providing environmental services.

The Global Strategy is a comprehensive framework for improving and ensuring the sustainability of agricultural and rural statistics (agriculture, in addition to crops, includes livestock, aquaculture, forestry production, and small-scale fisheries). The strategy also addresses emerging data needs such as those stemming from the recent spikes in food prices, thereby pushing more people into poverty, and the growing concerns about the impact of agriculture on the environment and climate change. The emerging challenges will require implementing new methodologies and technologies.

The Global Action Plan allows the Global Strategy to be put in place by describing in detail how it is being implemented. In fact, it is a detailed description of the technical activities to be conducted at the global, regional, and national levels as well as the corresponding governance structures. It also describes the articulation between the technical components that will contribute to capacity development of the countries.

The Global Action Plan directly addresses the three pillars forming the foundation of the Global Strategy:

1. Establishing a minimum set of core data that countries will disseminate on a regular basis to meet current and emerging demands (see appendix A);
2. Integrating agriculture into national statistical systems in order to meet the requirements of policy makers and other data users that statistical information be linked across the economic, social, and environmental domains ;
3. Fostering the sustainability of the agricultural statistical systems through governance and statistical capacity building.

The first pillar of the Global Strategy identifies a minimum set of core data that is intended to be used as a starting point in building agricultural statistics systems for the 21st century.

Because data requirements exceed what can be provided at any one time, the starting point is to define a minimum set of core data that will be provided on a regular basis by all countries.

The second pillar represents the most significant recommendation in the Global Strategy—that agriculture be integrated into the national statistical system. The conceptual framework for agricultural statistics calls for linking the farm as an economic unit and the household as a social unit and both with the land they occupy. The cross-cutting data requirements and the fact that agricultural statistics are not coordinated with other statistical programs in many countries call for the integration of agriculture into the national statistical system. However, in many countries the responsibilities for agricultural statistics are not coordinated across the national statistics offices (NSOs) and the statistics offices in the ministries of agriculture.² This is also true at the global level with national statistics offices under the auspices of the UNSC and the ministries of agriculture under the FAO.

The Global Strategy identifies the main tools for achieving this integration. One tool is a master sample frame for agriculture that would serve as the foundation for all data collection based on sample surveys or censuses. The concept of integration across data domains would also be ensured by an integrated survey framework and integrated data management system for all official statistics related to agriculture.

At the same time, the basic statistical system needs to be rebuilt in some countries; in others it needs to be much improved. Thus the third pillar is the foundation of governance and statistical capacity building, which are needed to produce a sustainable agricultural statistics system.

Implementation of the Global Strategy will be country and user-driven. The three pillars will be implemented taking into account the specific country context, the level of statistical capacity, the technical assistance and training needs, as well as users' needs.

Goals, Outcomes, and Main Outputs of the Global Action Plan

The goal of the Global Action Plan is to contribute to greater food security, reduced food price volatility and improved income and well-being of rural populations through evidence-based policies in line with the Millennium Development Goal (MDG) to “Eradicate extreme poverty and hunger.” In addition, improved policies will contribute to the sustainable use of land and water resources and the adaptation of agricultural activities to climate change to meet the challenges of MDG 7, “Ensure environmental sustainability.”

The outcome is to enable countries to develop sustainable statistical systems, that will produce accurate and reliable agricultural and rural data, comparable over time and across countries, that will be widely used by decision makers. More specifically, the outcome would be the following:

² The word *agriculture* is inclusive of the broader scope to include forestry, fisheries, and aquaculture as described in chapter 2 of the Global Strategy. The term *ministry of agriculture* is used to designate ministries dealing with the corresponding subsectors.

- Considerable increase in the number of countries with the capability to produce a minimum set of core data, provide analysis and disseminate the results to meet the current and emerging statistical demands of national and international stakeholders
- Substantial increase in the number of countries able to develop a sustainable agricultural statistics system through the coordination and integration of agriculture into the national statistical systems
- Increased number of people working on agricultural statistics who have the appropriate skills to use cost-effective methodologies in data collection, analysis, and presentation.

The outcome focuses on developing the statistical capacity that will enable countries to become responsible for sustainable and long-term data collection and the increased use of data by decision makers. This action plan aims to enable national statistical systems to meet the needs of users as indicated in the stakeholder analysis table in appendix B. The assessment of users' needs will ensure that the data produced respond to the real needs of the users and will be used.

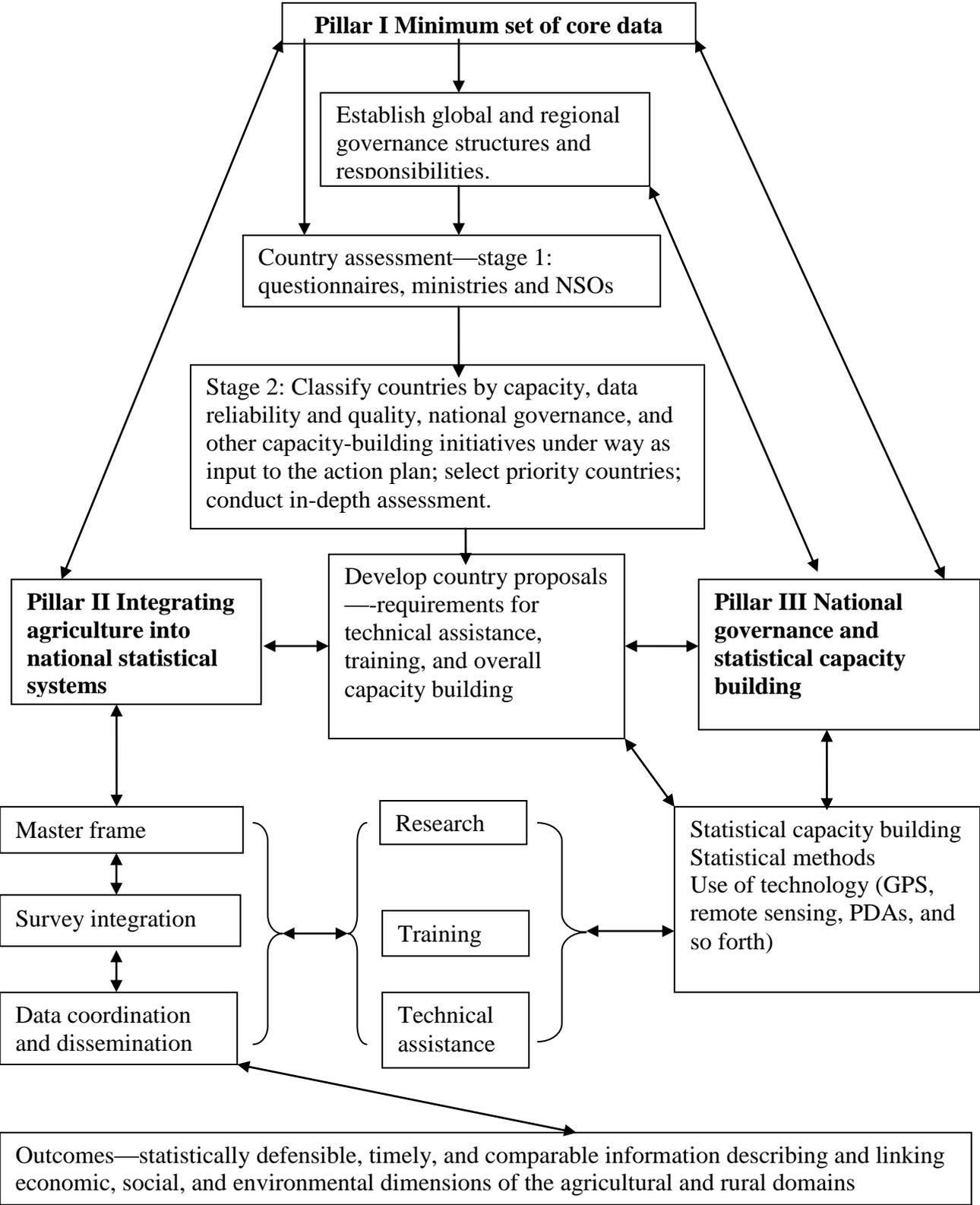
The main outputs of the Global Action Plan are:

- Advocacy materials and technical tools promoting the need for and use of statistics for effective decision and policy purposes;
- Technical assistance procedures developed and harmonized for improving the institutional, organizational, and technical capacity of agricultural statistical systems at the global, regional, and national levels;
- Guidelines prepared for development of Sector Strategic Plans for Agricultural and Rural Statistics (SSPARS) as a component of the National Strategies for the Development of Statistics (NSDS) to mainstream agriculture into the national statistical system and technical assistance provided to countries to apply the guidelines;
- Systems in place in countries for easy access and dissemination of national and subnational data such as CountrySTAT;
- Methodological guidelines, norms and statistical standards, handbooks and documentation of good practices for data collection, analysis and dissemination and technical assistance provided to countries to apply the methodologies;
- New cost-effective methodologies in data collection, elaboration, analysis, and presentation developed by leading research institutes, with a synergic approach, avoiding duplication of efforts and technical assistance provided to countries to apply these methodologies;
- A living database, which includes the relevant research projects and best practices for sharing knowledge and a roster of experts (names, contact details, areas of expertise, past projects);
- A network of agricultural statistics offices to exchange experiences and practices;
- Training materials produced (public goods), including e-learning and used at regional and country levels.

Implementation: An Overview

The Global Action Plan has a long-term perspective (10–15 years), and will follow a phased approach in which the first phase covers the five-year period 2012–16. Figure 1.1 outlines the steps needed to implement the strategy.

Figure 1.1 Overview of Steps to Implement the Global Strategy



Chapter 2

Global, Regional, and National Governance

Agriculture across the world is defined by geographic, climatic, economic, and cultural differences. In order to take these differences and the various levels of statistical development and operational issues across regions into account, and to ensure ownership by regional institutions, a regional approach to implementing the Global Strategy is being adopted. The Global Action Plan will set the global framework, establish norms and statistical standards that will avoid duplication of efforts between regional and national organizations, and facilitate the establishment of links and synergies with other global and regional initiatives. Because this Global Action Plan is viewed as part of the broader effort to improve statistical systems per se, close partnerships will be established with other organizations working in this field to maximize the impact of the plan. Moreover, the action plan foresees synergies and complementarities with other initiatives, such as the Agricultural Market Information System (AMIS) recently adopted by the G20 ministerial meeting. AMIS focuses more on a limited number of data items for selected food crops related to monitoring Global Food Market, mainly in the G20 countries and few developing countries³. The Global Strategy on the other hand concentrates on long term statistical capacity building in developing countries for key basic food and agricultural statistics.

This chapter describes the general framework for a governance structure to guide implementation of the Global Strategy. A key element of the strategy is the integration of agricultural statistics into the national statistical systems. This integration will require a significant effort in those countries in which agricultural and related statistics are collected and analyzed by institutions outside the national statistical system. Even where agriculture has been integrated to varying degrees, the re-engineering effort and required capacity building could still have an impact. For these reasons, a governance structure reflecting responsibilities at the global, regional, and national levels will be established.

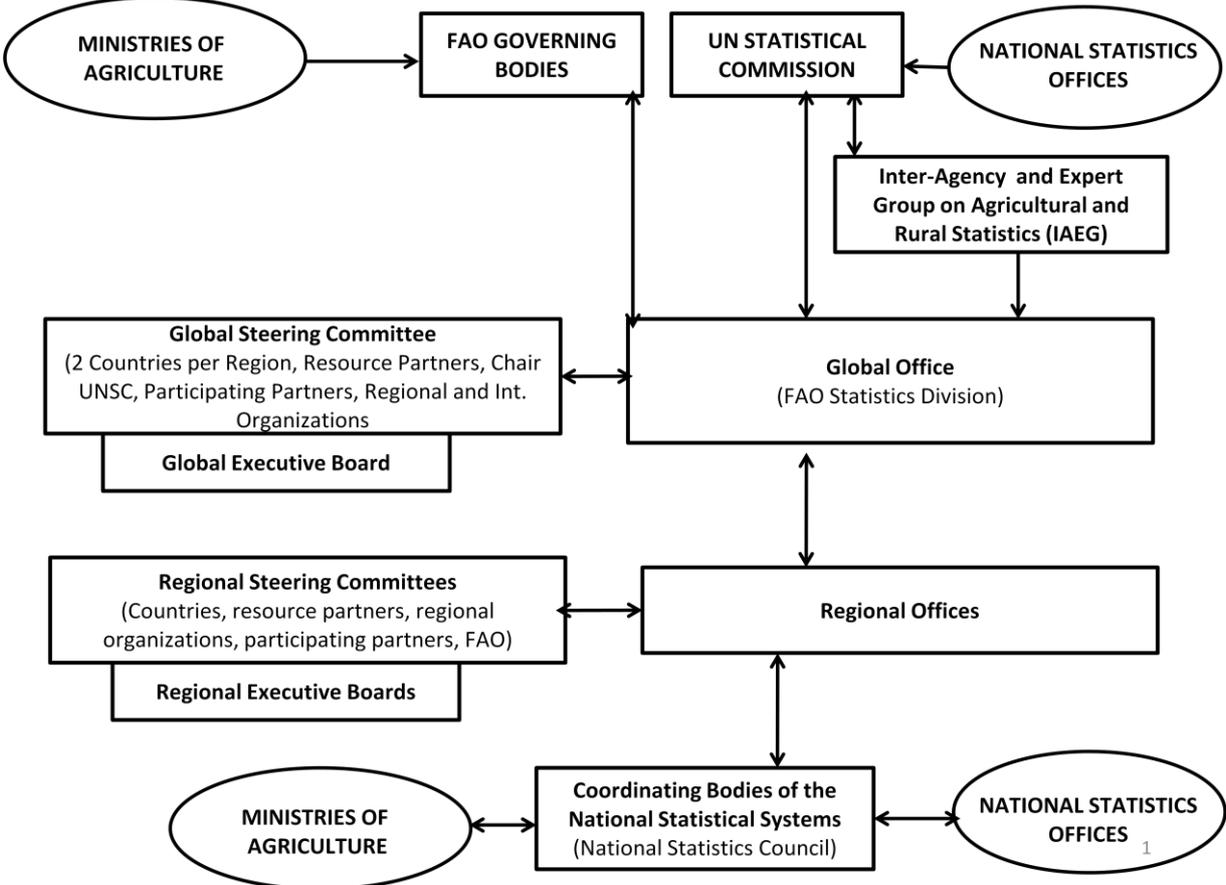
Governance Structure

The integration of agriculture into national statistical systems begins at the global level. The apex statistical body is the UNSC, which by design includes national statistical organizations. Agriculture is represented in the UNSC only if it is already fully integrated into the activities of a national statistics office. The Ministries of Agriculture steer FAO governing bodies, namely the FAO Council and the Committee on Agriculture (COAG). The Global Office reports on the implementation of the Global Strategy to the UNSC and to FAO governing bodies and this is the first step in integration.

Figure 2.1 is an overview of the governance structure, which is described in the sections that follow. A more detailed description is given in Appendix F.

³ The following five food crops are targeted by AMIS: Rice, Soybean, Corn, Cassava and Sugarcane. Main data items: Production, Stock, Consumption, Trade (export and import). Country coverage is G20 and eight main export/import countries.

Figure 2.1 Governance Structure



Global Governance Framework

Global Steering Committee (GSC). The Global Steering Committee is the ultimate decision making body and provides strategic guidance and oversight for the implementation of the Action Plan. The GSC is composed of FAO, resource partners, country representatives of the Regional Steering Committees (two per Region), the Chair of the Statistical Commission, key participating partners leading international organizations involved in agricultural and rural statistic and farmer associations. The Chair of the GSC will be elected for a term of 2 years. The GSC will meet at least once a year to determine the allocation of funds to global, regional, and country level activities and between different regions. It will approve the proposed annual work plans and the progress reports. Other tasks will be to ensure overall coordination, monitor progress in the implementation of the Global Plan and support resource mobilization. The GSC will also appoint the members of the Global Executive Board (GEB).

Global Executive Board (GEB). The Global Executive Board is a sub-group of the GSC from which it receives delegated authority to oversee the execution of the decisions. The GEB will meet at least three times a year, where possible at the margins of suitable international meetings. The GEB will also carry out GSC’s functions in the interim between GSC’s annual meetings, providing in particular policy directions to the global activities for the implementation of the Plan.

Global Office (GO). The Global Office, based in the FAO Statistics Division and led by the global coordinator, will ensure overall technical coordination of the implementation of the

Action Plan and will undertake normative work establishing standards, providing centralized technical and practical guidance on cross-regional issues. The Global Office will also act as Secretariat of the GSC servicing its meetings and providing recommendations on the allocation of funds.

Inter-Agency and Expert Group on Agricultural and Rural Statistics (IAEG). FAO has submitted a proposal to the UN Statistical Commission for the establishment of an Inter-Agency and Expert Group on Food Security, Sustainable Agricultural and Rural Development Statistics for guiding methodological developments in these statistical domains. The Inter-Agency and Expert Group will also provide guidance to the Global Steering Committee and the Global Office in the implementation of the Action Plan. The Inter-Agency and Expert Group will comprise high-level experts in statistics for food security, sustainable agriculture and rural development from national governments and international organizations. It will present an annual report to the Statistical Commission on the progress made in its activities.

Regional Governance Framework

Regional Steering Committee (RSC). The Regional Steering Committee is the decision-making body at regional level and will provide guidance and oversight for the implementation of the regional and country activities defined in the Regional Plan. The RSC will assess country proposals and prioritize the use of the funds among countries. The composition of the RSC will typically include representatives of countries, resource partners, regional participating partners (PPs), FAO and selected experts.

Regional Executive Board (REB). The Regional Executive Board is a sub-group of the RSC from which it will receive delegated authority to oversee the execution of the decisions. The REB will meet at least three times a year, where possible at the margins of suitable regional or international meetings. The REB will carry out RSC's functions in the interim between RSC's annual meetings. In particular, it will provide policy direction to the implementation of the regional Plan.

Regional Office (RO). The Regional Office will serve as Secretariat of the RSC and will be located in one of the participating partners tasked with the coordination of the regional activities.

National Governance Framework

Governance at the national level involves organizing a national statistical system that brings together the national statistics office and sector ministries and other agencies that provide data within the scope of the Global Strategy. In the case of agricultural statistics, this will include the ministries responsible for agriculture, forestry, and fisheries and any other institutions that collect agriculture-related data.

The coordination mechanism should ensure that the different data producers adhere to a common set of standards that follow the principles defined in the Global Strategy and brought forward in the Global Action Plan. Producers' compliance with these standards will prevent duplication of efforts and resources as well as the publication of conflicting data from different reporting agencies. It also ensures statistical integrity by making the data available and accessible. The coordination mechanism should provide a common voice for seeking

resources for the agricultural statistics system within the framework of the national statistical system. The sub-committee of the National Statistics Council would jointly organize and coordinate the development and use of the master sample frame, the integrated survey framework, and the database. It may be determined that certain ministries are best suited for activities such as those involving the master sample frame or the collection of specific types of data. All survey data collected, whichever ministry or agency collects them, should be based on the master sample frame in an integrated survey system with the outcomes stored in an integrated database. The role of each institution should be clearly defined and build on its knowledge and technical expertise (crops, livestock, aquaculture and fishery, forestry, land, and water).

The integration of agricultural statistics into a country's national statistical system does not mean that all responsibilities fall on the national statistical office, the ministry of agriculture, or any other agency in particular. It does, however, mean that the organizations with overlapping data needs accept the master sample frame, integrated survey framework, and database principles. The requirements at the national level begin with the formation of a national governing body that would be responsible for the following main tasks:

- Carrying out the detailed assessment of the current content and scope of the nation's agricultural statistics and statistical capabilities;
- Development or revising of the Sector Strategic Plans for Agricultural and Rural Statistics as components of the NSDS during their preparation or revision and identifying the respective roles and responsibilities of each organization in the national governing body;
- As needed, implementing or revising legislation regarding the authorities and responsibilities, including regulations concerning confidentiality of information. In other words, the integration of agriculture into the national statistical system must be reflected in the statistics laws of the country;
- Developing a strategy to foster public support for funding to support a sustainable statistical system;
- Involving data users and stakeholders to reach agreement on the content, scope, frequency, and coverage of data to be provided by the national statistical system—in other words, determining the set of core data as prescribed by the Global Strategy;
- Developing a country proposal to implement the strategy. This proposal would determine the training requirements and technical assistance needed to improve current statistical capabilities and implement the statistical components of the strategy;
- Coordinating technical assistance in statistics.
- Adopting and implementing new, cost-effective methods for producing agricultural statistics; where appropriate, taking advantage of the digital revolution and using new technologies such as global positioning systems (GPSs), personal data assistants (PDAs), remote sensing, and computer-assisted personal interviewing (CAPI).
- Harmonizing and disseminating data deriving from different sources and not harmonized, integrated, and easily accessible to users. Where needed, the existing systems and frameworks such as CountrySTAT or similar platforms will be used to improve the quality and accessibility of the existing data. Regular workshops for data users will be organized to ensure that their needs are being met by the data disseminated.

Appendix F describes in detail the governance framework.

Implementation at the Global, Regional, and National Levels

Table 2.1 is a detailed review of the activities needed to support the statistical capacity building and efforts to implement the Global Strategy. It also recognizes that considerable capacity building is needed before implementation begins. The table spells out specific activities for governance, country assessment, technical assistance, training, and research and identifies which activities are at global, regional, and national levels.

Table 2.1 Overview of Activities at Global, Regional, and National Levels

Global	Regional	National
<i>Governance</i>		
<ul style="list-style-type: none"> - Establish Global Steering Committee (GSC). - Establish Global Office, carry out, lead and coordinate research activities, to provide standards and guidelines for technical assistance and training, and to act as Secretariat of the GSC. 	<ul style="list-style-type: none"> - Where needed, establish Regional Steering Committees (RSC). - Where needed, develop Regional Action Plans to Implement the Global Strategy - Establish Regional Offices to carry out country assessments, provide technical assistance and training, and to act as Secretariat of the RSC. 	<ul style="list-style-type: none"> - Form national statistics councils and prepare country proposals and memoranda of understanding between the ministries of agriculture, national statistics offices (NSOs), and other stakeholders.
<ul style="list-style-type: none"> - Support resource mobilization with major international donors. 	<ul style="list-style-type: none"> - Support resource mobilization at regional level. 	<ul style="list-style-type: none"> - Support resource mobilization at national level.
<ul style="list-style-type: none"> - Prepare advocacy materials for resource mobilization and inclusion of stakeholders and users. 	<ul style="list-style-type: none"> - Supplement advocacy material to meet regional needs and involve regional stakeholders and users. 	<ul style="list-style-type: none"> - Prepare resource mobilization plan to put national statistical system on a sustainable basis.
<i>Country assessment</i>		
<ul style="list-style-type: none"> - Design and test the country assessment questionnaires and develop guidelines for an in-depth country assessment in close collaboration with regional partners. 	<ul style="list-style-type: none"> - Test the country assessment questionnaires and, add specific questions as required to ensure regional issues are included in assessments. - Organize and coordinate country assessment - Support ministries and NSOs in the country assessments, collect and process the filled questionnaires. 	<ul style="list-style-type: none"> - Ministries and NSO carry out the assessment. - Ensure that relevant stakeholders are represented in completing the questionnaire.
<ul style="list-style-type: none"> - Develop criteria for categorizing countries by statistical capacity, data 	<ul style="list-style-type: none"> - Contribute to development of criteria for categorizing countries 	

availability and quality, national governance, and so forth, in close collaboration with regional partners..	- Prepare country profiles of capacity, strengths, weaknesses, and possible entry points into implementation of the strategy.	
- In close collaboration with regional partners, prepare guidelines for preparation of country proposals and ensuring agriculture is included in National Strategies for the Development of Statistics (NSDS).	- Contribute to the preparation of guidelines on country proposals - Assist countries with preparation of country proposals. - Support countries in the identification of their technical assistance and training needs.	- Prepare country proposals for implementation of the Global Strategy, including technical assistance and training needs based on in-depth country assessment.
<i>Technical assistance</i>		
- Develop standards for technical assistance in consultation with regional partners and countries..	- Supplement and adapt standards for technical assistance to ensure regional specificities are taken into account	- Carry out technical assistance according to developed standards.
- Develop guidelines for sector strategic plans for integration of agriculture into National Strategy for the Development of Statistics.	- Assist countries with preparation of NSDS integrating sector strategic plans.	- Develop sector strategic plan for agriculture or update NSDS to include sector strategic plans, with assistance by Regional Offices.
- Prepare guidelines for statistical laws, confidentiality issues, and establishment of national statistical council.	- Adapt guidelines to meet regional specificities.	- Establish statistical legislation or, if available, amend, if needed, to reflect the integration of agriculture into national statistical system, with the assistance of Regional Offices.
- Prepare technical standards and guidelines to produce statistics on crop area, yield; livestock, poultry, prices and trade; employment and labor; land use; fishery and forestry production.	-Adapt guidelines to meet regional specificities, if needed. -Disseminate documentation and ensure standards are widely used. -Assist countries.	- Development of countries' capacity to produce statistics on crop area and yield, livestock, poultry, prices and trade; employment and labor; land use; fishery and forestry production, through technical assistance on how to apply prepared technical standards and guidelines.
- Prepare technical standards and guidelines for coordination of agricultural censuses with population	- Adapt standards to reflect regional requirements. - Assist countries.	- Develop countries' capacity to coordinate agricultural censuses with population censuses through technical

censuses.		assistance on prepared technical standards and guidelines.
- Prepare guidelines based on good practices and findings of research for development of master sample frame, integration of surveys, improved estimation practices, and use of administrative data.	- Collect good practices for development of master sample frame, integration of surveys, improved estimation practices, and use of administrative data - Adapt guidelines to meet regional requirements. - Disseminate documentation and ensure standards are widely used. - Assist countries.	- Improve countries' capacity to develop t a master sample frame, integrate surveys, improve estimation practices, and use administrative data, through technical assistance on prepared statistical standards.
- Prepare guidelines based on good practices and findings of research for use of remote sensing, global positioning systems, statistical software, and portable data entry devices.	- Collect good practices for use of remote sensing, global positioning systems, statistical software, and portable data entry devices - Adapt guidelines to meet regional requirements. - Assist countries.	- Improve countries' capacity through technical assistance on good practices and findings of research for use of remote sensing, global positioning systems, statistical software, and portable data entry devices.
- Prepare guidelines based on good practices and findings of research for sample design, data collection, estimation, and analysis.	- Collect good practices for sample design, data collection, estimation, and analysis - Contribute examples from region.	- Contribute examples of best practices from country. - Develop countries' capacity on data collection, estimation and analysis through technical assistance on guidelines developed.
- Document, develop, and support implementation of standards for data harmonization and dissemination using proven systems such as CountrySTAT.	- Adapt standards to meet regional requirements. - Assist countries.	- Through technical assistance, improve the countries' capacity to implement standards for data harmonization and dissemination using proven systems such as CountrySTAT.
- Document current and advanced analytical methods to add value to data and incorporate economic, social, and environmental dimensions.	- Adapt documentation of analysis methods to meet regional requirements. - Assist countries.	- Improve countries capacity to use current and advanced analytical methods to add value to data and incorporate economic, social, and environmental dimensions, through technical assistance.
- Prepare guidelines for technical assistance on advanced and cost-effective methods developed by research.	- Contribute to the preparation of guidelines for technical assistance - Assist countries.	- Contribute examples of best practices from country Develop countries' capacity to adopt advanced and cost-effective methods developed

		by research, through technical assistance.
- Document how analysis of data from the economic, social, and environmental dimensions can be used for policy purposes.	- Adapt documentation to meet regional requirements. - Assist countries.	- Improve countries' capacity to use data for policy purposes. - Promote and strengthen use of data through partnerships and specific workshops with data users, including planning institutions, private sector, research institutes, academia, and so forth.
- Enhance collaboration and networking between regions: establish a network of agricultural statistics offices and exchange of good practices.	- Contribute to networking between regions - Collect good practices - Develop technical assistance alternatives such as twinning arrangements. - Develop partnerships with stakeholders.	- Participate in networking and benefit from and contribute to examples of best practices.
- Enhance coordination and collaboration with other providers of statistical technical assistance and the international statistical community.	- Enhance coordination and collaboration at the regional level with other providers of statistical technical assistance and the regional statistical community.	- Coordinate statistical technical assistance at the national level.
- Develop and maintain a roster of experts.	- Contribute to the roster of experts.	- Contribute to the roster of experts.
- Ensure effective coordination, quality assurance, and overall monitoring and evaluation of technical assistance deliverables.	- Ensure effective coordination, quality assurance, and monitoring and evaluation of technical assistance deliverables at regional level.	- Monitor and evaluate technical assistance deliverables at national level.
<i>Training</i>		
- Develop standards for training.	- Adapt standards to meet regional requirements - Apply developed standards.	
- Document knowledge and experience requirements for different levels of core skills required to produce basic official statistics and for implementing master sample frame, integrated survey, and coordinated data system. - Provide training materials.	- Assist countries in identifying gaps between core skill requirements and qualifications of statistical staffs and plan training programs accordingly.	- Identify gaps between core skill requirements and qualifications of statistical staffs of country.
- Develop questionnaire for identifying training needs of countries during in-depth	- Assess training needs for implementing strategy within region, taking advantage of	- Assess training needs of country, taking advantage of other ongoing or completed

country assessment.	other ongoing or completed training needs assessments.	training needs assessments.
- Coordinate assessment of training needs with requirements of other sectors of national statistical systems.	- Liaise with institutes providing training to other sectors.	
- Develop questionnaires to create inventory of courses provided by training providers.	- Contribute to questionnaire development and obtain information from regional training centers and evaluate capabilities of each.	- Provide input about capabilities and quality of training provided by institutes in country.
- Develop materials for e-learning and short in-service training that will support rebuilding required knowledge levels and actions of the Global Strategy.	- Compile, according to identified country needs, training programs based on the material created at global level. - Organize training in regional training centers. - Promote e-learning by informing about and facilitating use of e-learning materials.	- Select candidates for training centers. - Organize short in-service training courses. - Ensure access to websites with e-learning materials.
- Develop training materials to cultivate communication skills with data users, especially policy and decision makers. - Develop training material to support specific workshops with data users, including planning institutions, private sector, research institutes, academia, and so forth.	- Organize corresponding training of medium and top management of statistics agencies in regional training centers. - Organize specific workshops with data users, including planning institutions, private sector, research institutes, academia, and so forth.	- Determine relevant issues in the country.
- Promote exchange of skills, expertise, and experience between training centers <i>across regions</i> by compiling and documenting good practices in design and delivery of training programs and establishing twinning arrangements.	- Promote exchange of skills, expertise, and experience between training centers <i>within regions</i> via compiling and documenting good practices in design and delivery of training programs and establishing twinning arrangements.	- Contribute examples of good practices from country in design and delivery of training programs
- Provide resources and standards to upgrade regional training infrastructures.	- Upgrade training infrastructure (computer hardware and software, audiovisual equipment and associated items, material for libraries) of training centers	

	in regions.	
<ul style="list-style-type: none"> - Prepare training material on advanced and cost-effective methods developed by research. - Provide resources to support advanced learning opportunities. 	<ul style="list-style-type: none"> - Support scholarships and participation of nominated staff from agricultural statistical agencies in approved training courses on advanced and cost-effective methods developed by research. - Organize training in regional training centers. 	<ul style="list-style-type: none"> - Nominate staff for scholarships and participation in approved training courses on advanced and cost-effective methods developed by research.
<i>Research</i>		
<ul style="list-style-type: none"> - Assess whether specific research needs of regions are already covered by research plan. - Take into account specific research needs of regions. 	<ul style="list-style-type: none"> - Collaborate with the Global Office to ensure that specific research needs of regions are taken into account. 	<ul style="list-style-type: none"> - Collaborate with the Global Office to ensure that relevant research needs of the countries are taken into account.
<ul style="list-style-type: none"> - Collect information on ongoing or already completed research activities on prioritized topics. 	<ul style="list-style-type: none"> - Provide information on ongoing research projects in region. 	<ul style="list-style-type: none"> - Provide information on state of the art in country and on ongoing research projects.
<ul style="list-style-type: none"> - Identify potential partners. 	<ul style="list-style-type: none"> - Contribute to identification of potential partners - Inform the Global Office about potential partners in region. 	
<ul style="list-style-type: none"> - Facilitate contacts and exchange of information among universities, other research institutes, statistical offices, and ministries of agriculture and other relevant agencies. 	<ul style="list-style-type: none"> - Collaborate with the Global Office in facilitating contacts and exchange of information. 	
<ul style="list-style-type: none"> - Review relevant literature. 		
<ul style="list-style-type: none"> - Perform gap analysis. 		
<ul style="list-style-type: none"> - Identify remaining methodological issues. 		
<ul style="list-style-type: none"> - Design and conduct empirical studies; process and analyze results. 	<ul style="list-style-type: none"> Contribute to the conduct of empirical studies. 	<ul style="list-style-type: none"> Provide assistance in carrying out pilot surveys at country level.
<ul style="list-style-type: none"> - Develop methodological solutions for the prioritized research topics, building synergy and avoiding duplication of effort. 	<ul style="list-style-type: none"> - Provide inputs to the development of methodological solutions 	
<ul style="list-style-type: none"> - Validate developed methodological solutions 	<ul style="list-style-type: none"> - Contribute to validation of developed methodological solutions. 	<ul style="list-style-type: none"> - Contribute to validation of developed methodological solutions
<ul style="list-style-type: none"> - Prepare methodological 	<ul style="list-style-type: none"> - Provide inputs to the 	

publications on results of research.	preparation of methodological publications	
- Organize dissemination workshops with countries and other stakeholders.	- Contribute to organization of dissemination workshops.	- Participate in dissemination workshops.
- Disseminate the findings on Web.		
- Facilitate access and sharing of knowledge and reduction of duplication.	- Contribute to facilitating access to and sharing of knowledge at regional level.	- Contribute to facilitating access to and sharing of knowledge at national level.
- Contribute to preparation of guidelines and handbooks for advanced technical assistance and textbooks for training based on results of research.	- Provide technical inputs to the preparation of guidelines	

Initial Activities for Immediate Implementation

Implementation of the Global Action Plan will build on the ongoing capacity building and research activities being conducted by several agencies at all levels. While the country assessments are under way, several aspects of technical assistance, training, and research can be launched. The following activities of the Global Action Plan could start immediately:

- Preparing technical standards and guidelines for producing statistics on crop area and yield, livestock and poultry inventories and production, prices and trade, employment and labour, land use, fisheries, and forestry;
- Pilot testing the approaches and methodologies for satisfying the emerging statistical demands in an initial set of countries;
- Developing standards and materials for face-to-face and e-learning training;
- Detecting the best practices for urgent statistical problems in agricultural statistics (e.g., yield estimation) and assessing whether and how they can be adapted to other regions;
- Initiating collaboration with the lead partners for developing new, cost-effective methodologies and tools in data collection, elaboration, analysis, and presentation for urgent topics and quick wins.

In some countries, activities for improving agricultural and rural statistics in line with the recommendations of the Global Strategy are ongoing (see box 2.1).

Box 2.1 Ethiopia: New Approaches to Producing Agricultural Statistics as Recommended in the Global Strategy

Ethiopia has a coherent system for data production to meet policy needs in line with the Global Strategy. The following new approaches are producing successful results:

- Developing a master sample frame for the National Integrated Household Survey Programme (NIHSP) as the foundation for the integrated survey framework
- Replacing ad hoc surveys with an integrated survey framework to provide a coherent package of data—socioeconomic, demographic, and agricultural—on a continuous basis
- Using the integrated survey framework to provide comparable data over time and across countries by means of an annual survey of selected core items
- Implementing new approaches to generating crop area, yield, and production estimates and forecasts using area and list frames (multiple frame) and employing new technologies and tools (e.g., GPS, remote sensing, PDAs) to generate crop area estimates that *substantially reduce the cost of surveys, improve the quality of data, and make the results available in a more timely manner*. For example, use of a GPS to measure crop area reduces by as much as 60 percent the time needed for the traditional methods.

Chapter 3

Interdependent Linkages of Components of the Global Action Plan

An evaluation by the FAO in 2008 pointed out that a most pressing need in national statistical systems is to improve the basic capacity for producing agricultural statistics; in fact, the report described the need as a re-emerging one (FAO 2008a). Therefore, the Global Action Plan considers the need to rebuild statistical capacity, while also providing the technical support to implement the methodologies included in the Global Strategy. A main purpose of the action plan is to contribute to this capacity-building effort by offering technical assistance and training as determined by the country assessments and based on methodological research. This chapter is an overview of the linkages between these technical components.

Need for Country Assessments, Technical Assistance, Training, and Research

The first pillar of the Global Strategy aims at enabling countries to produce and disseminate, on a regular basis, a minimum set of reliable core economic, social, and environmental data. These data should be comparable over time and across countries to sustainably meet the current and emerging data needs on food security, sustainable agricultural development, and their interaction with the environment and climate change.

The availability of these data will allow farmers to make better farming and marketing choices and national and international policy makers to develop better policies (particularly for reducing the risk of food shortages) and to monitor their implementation more effectively. The lack of adequate technical tools, a statistical methodology, and a survey framework to support data production efforts has been identified as one of the main reasons for the insufficient data and poor data quality on the agriculture sector.

From the 1950s through the 1980s, important efforts were made to develop tools and methods to address some of the specific challenges facing agricultural statisticians. FAO, along with the World Bank, was at the forefront of these efforts.⁴ The methods and tools for estimating crop area, yield, and production were largely inspired by the research on objective measurement and crop cutting conducted in India in the 1940s and 1950s by the teams led by Mahalanobis (1946). The efforts resulted in publication of some basic methodological guidelines and practical handbooks on collecting agricultural statistics in developing countries that are still widely used by agricultural statisticians in African countries, even though the guidelines and handbooks do not reflect modern realities.

In the 1990s and 2000s, methodological research activities and the preparation of standards and guidelines for essential statistical activities declined. Still, some important publications were produced, such as the decennial *World Census of Agriculture* (FAO 2000, 2010), the multiple frame methodology (FAO 1996, 1998), and working documents on crop forecasting, enumeration of nomadic livestock, and estimation of root crop production. But these efforts—now over 10 years old—fell short of addressing all the challenges of producing accurate

⁴ See the contributions of Sukhatme and Sukhatme (1970), Panse (1964), Narain (1955), Zarkovich (1963), Casley and Lury (1981), FAO (1986) and Kish (1989)

agricultural statistics in developing countries. This lack of research to support the documentation of methodological guidelines adversely affected efforts to provide countries with the technical assistance and training needed to sustain their statistical systems. Thus a comprehensive, integrated methodological research program is needed to support the documentation of statistical standards for efforts to improve agricultural statistics.

In view of the current technological advances, particularly the use of geospatial information and geo-referencing devices, alternative and more efficient methods and tools relevant to developing countries need to be developed and implemented for improving the cost efficiency of data collection systems and for better data quality. In addition, the rapidly changing nature of agriculture and the emergence of new issues make the available data and some current methods obsolete. For example, information is seldom collected on biofuel production and use, the impact of agriculture on the environment, and climate change adaptation and mitigation practices as well as the impact of climate change on poverty, and little is known about the methods and best practices on how to obtain that data.

In order to improve agricultural and rural statistics significantly, and on a sustainable basis, all these problems will be addressed in a synergic approach. In that approach, the existing operational tools and data collection methods will be validated and updated. In some cases, the feasibility of adapting the methods adopted in developed countries to the specificities of developing countries will be explored. And in others, new cost-efficient, sustainable methods will be developed, taking into account the technological progress. The result of these activities will be methodological publications, norms, and statistical standards for data collection, analysis, and dissemination that will serve as inputs for both the training and the technical assistance components.

The Technical Components and Their Interlinks

The Global Action Plan contains four technical components that were identified by the UNSC to be developed by FAO in collaboration with the UNSC Friends of the Chair working group: country assessments, technical assistance, training, and research. The requirements for each are reviewed in detail in the following chapters. These technical components are also interdependent and articulated in a capacity-building program.

FAO is providing the overall coordination and a secretariat for the Global Action Plan so that it is coherent and consistent with regional activities.

Most research, training, and technical assistance topics call for expertise in specialized areas that are difficult to maintain in many regions. The action plan will face these challenges, which will require a concerted effort by all stakeholders. Meanwhile, the action plan will guarantee full integration among the technical components. This integrated approach will also apply to the phased implementation, and it will prevent duplication of effort.

Technical assistance and training requirements will be determined by assessment of the national capacities. At the same time, the priority research topics will be addressed. Outputs from the research component will be the basis for innovative technical assistance and training. The technical assistance activities put in place for developing the statistical capacity of countries will require training and research.

Table 3.1 focuses on the global, regional, and national activities for governance, country assessments, technical assistance, training, and research. It shows for each main technical assistance activity the training and the research requirements that correspond with the pillars of the Global Strategy. Because technical assistance is the basic instrument for developing the capacity of countries, the training and research activities are designed to feed the technical assistance efforts.

Table 3.1 Linkages among Technical Assistance, Training and Research

Technical assistance	Training	Research
- Provide assistance for the county assessment.	-Train the analysts conducting country assessment.	
- Develop standards for technical assistance.		
- Develop and apply guidelines for SSPARS in order to integrate agriculture into NSDS.		- Conduct research on how to mainstream agriculture into NSDS.
- Prepare and apply guidelines for statistical laws, confidentiality issues, and establishment of national statistical council.		- Conduct research for creating an appropriate framework for development of an integrated agricultural statistics programme
- Prepare and apply technical standards and guidelines on area statistics, yield forecasting, and estimation; livestock and poultry inventory and production estimates; prices and trade; employment and labor; censuses; land use; and fishery and forestry production.	- Translate standards into training materials. - Provide training.	- Improve data collection methods. - Improve methodology for data analysis. - Improve methodology for market statistics. - Identify appropriate indicators and collection methods for small-scale fisheries.
- Prepare and apply statistical standards for coordination of agricultural censuses with population censuses.		
- Document and apply statistical standards for development of master sample frame, integration of surveys, estimation practices, and use of administrative data.	- Provide training materials for validation and reconciliation of data from different sources.	- Identify the most appropriate master frame for integrated survey. - Develop more efficient and more robust methods for using administrative data to improve agricultural statistics.
- Develop and apply guidelines based on good practices and findings of research for use of remote sensing, global positioning systems (GPS),	- Contribute to translation of current and advanced practices into training materials. - Train specialized staff	- Improve methods for using GPS, GIS, and remote sensing to set up a master sampling frame for integrated survey.

statistical software, and portable data entry devices.	in using GIS and remote sensing data.	
- Develop and apply guidelines based on good practices and findings of research for sample design, data collection, estimation, and data analysis.	- Contribute to translation of current and advanced practices into training materials. - Train specialized staff.	- Improve data collection methods. - Improve methodology for data analysis.
- Document, develop, and support implementation of standards for data harmonization and dissemination using proven systems such as CountrySTAT.	- Provide training materials and train specialized staff in validation and reconciliation of data from different sources and implementation of data management and dissemination systems.	- Improve methods, standards, and systems to implement integrated database for data management and dissemination.
- Document and apply current and advanced analysis methods to add value to data and incorporate economic, social, and environmental dimensions.		- Improve methodology for data analysis. - Identify appropriate indicators and collection methods for agri-environment.
- Prepare and apply guidelines for technical assistance on advanced and cost-effective methods developed by research.	- Prepare handbooks for training on advanced and cost-effective methods developed by research.	- Contribute to preparation of guidelines and handbooks on advanced and cost-effective methods developed by research.
- Document and apply how analysis of data from economic, social, and environmental dimensions can be used for policy purposes.	- Prepare training materials to support joint workshops for statisticians and policy makers and other data users on uses of data.	- Improve methodology for determining users' information needs for decision making.
- Enhance collaboration and networking between regions; establish a network of agricultural statistics offices for exchange of best practices.	- Encourage more advanced countries to provide training to other countries.	
- Enhance coordination and collaboration with other providers of statistical technical assistance and the international statistical community.	- Ensure coordination of technical assistance and training.	
- Develop and maintain roster of experts.		
- Ensure effective coordination, quality assurance, and overall monitoring and evaluation of technical assistance deliverables.		

Chapter 4

Country Assessments

The country assessments, the starting point of implementation of the Global Strategy, will be carried out in two stages. The first stage will establish baseline information on a country's statistical capacity, using a globally standardized questionnaire developed by the global team. The information generated will be used for designing the second, more in-depth stage of the country assessment, which will be the basis for preparation of a country proposal for technical assistance and training based on the choice of the appropriate methodology and technology for implementation.

First Stage

The questionnaire used in the first stage will collect information from the national statistics offices and statistical offices in the ministries of agriculture and other institutions producing agricultural statistics using the well-established channels of the regional statistical commissions of FAO or similar bodies. This survey will provide information on each country's institutional framework for agriculture statistics, the extent to which each country is producing the minimum set of core data, who is providing what in the country, the frequency of the data produced, and its quality. This information will allow categorization of countries by their capacity to produce the minimum set of core data. The level of statistical development in a country, as measured by the results of this questionnaire, will be one of the criteria for the selection of priority countries.

The questionnaire for the first stage of the country assessment will include the following elements:

- The existing institutional infrastructure for agriculture statistics and the key statistical activities in the country, including elements such as whether there is a legal framework for agricultural statistics and, if so, the organization(s) to which it relates, and the status of the preparation of National Strategies for the Development of Statistics and whether they encompass agriculture.
- The national capability to provide the minimum set of core data on a sustainable basis. The questionnaire will determine what items in the minimum set of core data are being provided, the frequency with which they are available, and by whom they are provided, recognizing that more than one institution may be providing data for the same items. If more than one institution is currently providing data about items in the minimum set of core data, then the information will be obtained from each.
- The timing and scope of major statistical activities in the agricultural sector—for example, whether an agricultural census has been conducted and, if so, when, its scope of production (crops, livestock, fishery and aquaculture, and forestry), and the coverage of the country.
- The sampling frames and statistical methods used for key statistical activities—for example, whether the list frames or area frames are used.

- The current donor support for statistical operations. Each reporting institution will be asked to describe these efforts as well as provide information about the technical assistance and training being provided by donors. Key donors in each country will be identified.
- The national statistical infrastructure and use of technology. Other questions about the national statistical infrastructure will be about the use of technology such as remote sensing, global positioning systems, and personal data assistance devices.
- Status of the most recent population census, when it was conducted, who conducted it, and whether it included information about agriculture. There will be questions about the compilation of national accounts, the adoption of international classifications, and the preparation of price indexes such as those for consumer and producer prices.
- The resources (national budget, number of people, and their level of training) available for providing statistics. Questions about the structure of the national statistical system will revolve around whether there is a coordinating body such as a national statistical council and advisory committees representing data users.
- Data dissemination strategies and support to users.
- Critical constraints in the system in order to help identify a country's priority needs.

Because of the regional variations in the organization of statistical activities in the subsectors of agriculture, the regional implementing agencies will have flexibility in administering the questionnaire at the country level, while maintaining the core characteristics of the standard questionnaire for international comparisons.

A major benefit of this questionnaire will be the opportunity it presents to learn from those countries whose stage of statistical development includes many of the principles described in the Global Strategy. For example, countries that have formed a national statistical council to coordinate the collection of agricultural statistics can provide lessons learned for other countries that need to take the same step. Countries that have included agriculture questions in their population census or who use a master sample frame or have experience with remote sensing will provide valuable input about the choices of methodology. The questionnaire will also identify which countries have the capacity to provide input into the research agenda by assisting with or conducting pilot surveys.

At the other end of the statistical development spectrum are the least developed countries, where there may be little or no capacity for any statistical programs, including agriculture at the start of the process. Some may not even have the capacity to prepare a national strategy or to carry out basic statistical activities. In these cases, implementation of the Global Strategy will have to be carried out in harmony with development of the statistical system in general. An overall technical assistance and training program coordinated with other sectors will be needed in such countries.

Not all countries will begin implementation of the Global Strategy at the same time, nor will they use the same methodology or take the same amount of time. The country assessment will determine when the implementation should begin, the time frame in which it will take place, and the statistical methodology to be employed and the most critical areas for priority intervention.

The country assessment also will provide information about what other statistical development activities are under way at the country level. For example, donors providing technical support for household surveys should be asked to coordinate these efforts with the implementation plan to improve agricultural statistics and, in particular, the establishment of a master sampling frame.

The first stage (questionnaire) of the country assessment should provide the global and regional coordinators with the information they need to finalize development of the statistical standards and guidelines for the technical assistance and training programs. It will also identify countries in which assistance will require developing a basic infrastructure that includes the preparation of statistical laws and regulations. The findings of the first stage should be provided to donors who have interests in specific countries or types of countries based on their statistical capacity.

Second Stage

The first stage of the country assessment and the resulting statistical capacity-building indicators will allow the regional and global coordinators to mobilize the appropriate consultants to provide technical assistance and training for the second stage of the assessment, which will be preparation of the country proposal. But before this second stage, countries will have to demonstrate the political will and commitment needed to implement the three pillars of the Global Strategy. This second stage will also determine the human and financial resources a country needs to seek in order to build a sustainable statistical system. This stage should also produce a work plan that will lead to preparation of the SSPARS for implementation of the Global Strategy. This work plan will determine the capacity-building requirements and when they should take place. Periodic reassessments using the standard questionnaire will serve as a tool for monitoring the growth in country capacity arising from the interventions made during implementation of the strategy.

Chapter 5

Technical Assistance Plan

Technical assistance is the main driver of the Global Action Plan; it will enable countries to improve their agricultural and rural statistics.

One of the main challenges in the delivery of technical assistance has been its effectiveness, and particularly the sustainability of many of the interventions. In the past, interventions have been directed at meeting urgent short-term data needs, especially to inform the donor-supported implementation plans and programs, rather than to meet national needs and longer-term development of a sustainable capacity for statistics. There has also been a lack of coordination and prioritization of technical assistance. In some countries, technical assistance did not meet one important objective—transferring know-how and technical expertise to counterparts. And it did not always focus on the need to enhance the effective demand for data at political levels in order to enlist adequate funding and other forms of commitment from national governments and avoid under-resourcing the production and development of statistics.

The initiatives for statistical capacity building already exist. One of the most extensive is the Partnership in Statistics for Development in the 21st Century (PARIS21). Such initiatives have focused on the national statistics offices, especially for several areas of common interest such as improvement of survey programs and increasing the use and value of survey data. This initiative also includes the preparation of National Strategies for the Development of Statistics.

In many cases, it is possible to expand the scope of these efforts to include agricultural statistics. In addition, there are several areas in which agriculture can be integrated into existing survey activities such as linking population and the agricultural census and using agriculture modules in household surveys (such as the Living Standard Measurement Study). Such integration opens new themes for data analysis and expanding information for users. To ensure greater coherence of capacity-building activities at the country level, the regional and national technical assistance programs will identify which current activities can be linked to agricultural statistics. Where activities are ongoing in the region, the Global Office will establish a regular working procedure to liaise with development partners to incorporate agriculture statistics and sectoral agencies where possible and to ensure that the activities of all partners are consistent with the Global Strategy. The regional offices will be responsible for keeping track of partners' activities within the region, informing the Global Office, and carrying out the delegated liaison tasks.

The responsibilities at the global and regional levels for technical assistance have two components. The first, a major responsibility at the global level, is developing and documenting the statistical standards and technical guidelines for all aspects of the agricultural statistics system. Documentation of the technical standards will be the basis for much of the training program that will be used by the experts providing on-site technical assistance, and directly by countries with the statistical capacity to do so.

The second component of technical assistance consists of the technical experts working directly with a country on implementing statistical methods. The statistical standards and guidelines ensure that the technical experts are applying the statistical methods in each country consistently. This task will be supported by the training of trainers in each of the regions in the use of these guidelines. Activities will also be undertaken related to coordination, monitoring, quality assurance, networking, and information exchange about technical assistance activities.

Technical assistance activities at the global, regional and country levels are shown in detail in table 2.1 in chapter 2. This table shows the areas in which detailed documentation of standards and guidelines is needed for the statistical capacity building and implementation of the Global Strategy.

At the regional level, technical assistance will enhance the implementation program based on the guidelines and documentation provided by the Global Office through a combination of knowledge transfer and direct country assistance. Based on the country assessment, countries will be classified according to their level of statistical capacity and grouped accordingly. Programs will be developed for each group of countries to move them forward in a stepwise progression. Sustainability of structures and capacities will be of paramount consideration, as will national ownership of and commitment to the program.

All Pillars

Technical assistance will be provided, as needed, for the following main areas affecting all pillars of the Global Strategy:

1. The country assessment, the starting point for the program, will address the following:
 - Establishing baseline information on the national capability to produce the core set of data advocated in the Global Strategy on a sustainable basis.
 - Determining the quantity and quality of the current data produced by source if multiple organizations produce the same data.
 - Evaluating the different sources of information and their reliability and accuracy.
 - Evaluating the weaknesses and strengths of the agricultural statistical system and ways to overcome weaknesses and leverage strengths.
 - Assessing the roles and responsibilities of the agencies involved in collecting, compiling, processing, analyzing, and disseminating agricultural and rural statistics.
 - Determining the current and future needs for capacity building such as training, technical assistance, research, and methodologies.
 - Evaluating the extent to which integration of agriculture into the national statistical system takes place as well as a country's ability to develop the agriculture master sample frame, integrated survey framework, and data management system.
 - Assessing the extent to which agricultural and rural statistics are incorporated in the current NSDS.

2. Standards and guidelines will be established for all aspects of and requirements for a fully functioning national statistical system.
3. The Global Office will monitor the development of new methods and technologies suitable for statistics by networking with other statistical agencies and through feedback from users. This knowledge will be widely shared. Technical assistance at the regional and national levels will be closely coordinated with other agencies to ensure maximum impact. Cooperation among developing countries (South-South) will be used wherever possible for skills transfer.
4. Statistical software packages are a powerful tool for data processing and analysis. Technical assistance will be required to support introduction of the appropriate statistical software packages. Because of the broader implications for the national statistical system, where possible capacity building will address the needs of the overall system and not just the needs of the agricultural statistics system.

Pillar I: Ensuring a Minimum Set of Core Data

The establishment of a minimum set of core data that countries will collect to meet the current and emerging demands will require undertaking the following tasks:

- Assembling, reviewing, analyzing, and documenting good practices as well as evaluating the existing agricultural data sets to determine the causes of inconsistencies and discrepancies in the agricultural data from different sources and propose how these may be reconciled. This task can be carried out using the CountrySTAT system for easy access to national and subnational data and the Accelerated Data Program (ADP), a PARIS21 satellite program. The ADP assists countries in identifying weaknesses and making short-term improvements in the relevant statistical processes such as household surveys in order to quickly obtain or improve estimates of key indicators, including those for the Millennium Development Goals.
- Verifying the accuracy and reliability of the agricultural production data series using information on, among other things, agricultural prices, export volumes and values, level and distribution of rainfall, and household consumption that could directly or indirectly explain the production levels and trends
- Undertaking data analysis of the linkages among the economic, social, and environmental domains.

Technical assistance will be needed to introduce the concept of a multidimensional approach and its implications for the statistical system. Follow-up at the national level will be required to fill critical skill gaps and to build capacity.

Pillar II: Integration of Agriculture into the National Statistical System

Countries will design and implement SSPARS in the framework of the NSDS to support the integration of agriculture into national statistical systems. Working closely with PARIS21 and other development partners supporting the NSDS initiative, those providing technical assistance will help countries prepare their sector strategic plans using guidelines issued by the Global Office.

A key element of developing an integrated statistical system is development of a master sampling frame. Countries will be introduced to the concept of a master sampling frame and receive assistance with its design and construction.

The data collection system for agricultural statistics will include data from all sources— notably censuses, surveys, remote sensing, and administrative records. Within the framework of the Global Strategy, countries will receive help in designing an integrated survey framework that (1) provides an annual work program that is consistent from year to year, (2) minimizes the required scope of censuses, (3) recognizes that some data need to be collected more often than annually because of the seasonal nature of agriculture and the crop and livestock production cycles, and (4) takes into account the additional data sources that need to be included in the overall framework such as administrative data, remotely sensed data, and community surveys. This effort will engage data users to ensure their changing priorities are being met.

Assistance will be provided for integrating the agricultural census with the population census, applying the modular approach, and introducing new areas such as aquaculture, as advocated in the FAO's *World Programme for the Census of Agriculture 2010* (FAO 2010b). All are highly relevant to implementation of the Global Strategy.

Integration of the survey process, including sample design, questionnaires, and methods of data collection, analysis, and estimation will also be supported by technical assistance.

Technical assistance will support the establishment of a data management system that fulfills three functions: (1) access to official statistics for dissemination purposes; (2) storage and retrieval of survey results; and (3) access to farm, household, and geo-referenced data for research. The system should be able to support the dissemination of data both within and across countries.

As a FAO-based system, the introduction of CountrySTAT at the country and regional levels will require specific technical assistance, which more generally will be needed to implement internationally comparable databases (see box 5.1).

Box 5.1 CountrySTAT

CountrySTAT (<http://www.countrySTAT.org>) is a Web-based information technology system for food and agricultural statistics at the national and subnational levels. It allows countries to better organize, harmonize, and standardize statistical data from multiple sources and integrate them into a common platform (a one-stop center). Easily accessible online, it enables researchers, policy makers, development organizations, and the private sector to design and implement better policies.

Through national and regional CountrySTAT projects, FAO has been able to build partnerships with statistical offices and ministries of agriculture, fisheries, and forestry, among others, to introduce the system and develop the national capacity to implement it. In each country, the national government makes a substantial contribution to ensure deployment of the system and continued training and maintenance.

The Philippines was one of the first countries to establish a CountrySTAT system. The government now funds and maintains the system, and it provides other developing countries with expertise—indeed, expertise from the Philippines was used to develop CountrySTAT in Bhutan. Data from 1990 onward are available, updated monthly. Farmers and policy makers can track current prices at the farm gate and in the wholesale and retail markets.

With the support of the Bill and Melinda Gates Foundation (BMGF), the CountrySTAT system has been installed in 17 Sub-Saharan African countries in three years, with a budget of US\$6.4 million. The system is also being expanded to other African countries and other regions. The West African Economic and Monetary Union has adopted the CountrySTAT system for all of its member countries and regional headquarters and provided the additional funding needed to cover three countries not covered by BMGF funding. The same approach is being taken by the East African Community with funding from Italian Cooperation. The Southern African Development Community has also expressed its interest in adopting the system. And there are increasing numbers of requests from other countries in Latin America, Asia, and Near East.

Pillar III: Sustainability of the Statistical System through Governance and Statistical Capacity Building

The sustainability of the agricultural statistics system will be achieved through governance and statistical capacity building. To this end, the technical assistance program will address the following issues:

- Assessing the institutional and organizational structures supporting the rural and agricultural statistics system and the roles and responsibilities of the agencies involved to determine whether a memorandum of understanding is needed between these agencies to formalize their respective roles.
- Promoting statistics and statistical development outside the NSO in sectors that produce statistics related to agriculture and rural development.
- Enabling statistical legislation.
- Mainstreaming statistics in sector development policies, programs, and budgets.
- Enhancing coordination, collaboration, and networking.

The final point is that technical assistance will be provided for statistical capacity building, not to implement specific statistical methodologies. For example, those providing technical assistance will enable a country's statisticians to implement and maintain the methodology being used or introduced; they will not do the work of data collection for them.

The outcomes of the technical assistance component will be the following:

- More coordinated technical assistance between resource partners and stakeholders in the national statistical system.
- A greater focus on longer-term technical assistance to develop statistical systems that are sustainable by ensuring that all participants in the national statistical system benefit from the knowledge transfer.
- An improved ability to meet the data needs for policy use by adopting a greater focus on data analysis in the country, timing activities appropriately, and disseminating the data adequately.

Chapter 6

Training Plan

One of the challenges facing implementation of the Global Strategy is that the personnel in charge of agricultural statistics in many countries (at both the management and technical levels) lack the appropriate knowledge and skills.

Limited data are available on the demand for training in agricultural statistics in developing countries, the potential supply of training centers, and the gaps between the supply of and demand for training. Analysis of the available information, based on FAO surveys in 2005, 2007 (FAO 2008b), and 2009 (unpublished results) as well as information provided by countries, mainly from the NSDS, suggests that the following concerns and issues need to be addressed for improving statistical data production:

- In many developing countries, some members of the statistical staff lack even the core skills and competencies needed to produce quality statistics.
- There are insufficient short in-service training courses available to enable existing staff to upgrade their skills and knowledge, especially in new and emerging areas.
- There is a need to develop new courses and to modify the curricula for courses that are already offered that lead to first and postgraduate degrees in statistics and related topics.
- The capacity of the existing training centers already offering specific training courses in agricultural statistics should be strengthened, and a process should be supported in which their experience and expertise can be networked and made available to other training organizations.
- There are not sufficient funds in many countries to meet the costs of both short- and long-term training.
- The existing coordination mechanisms should be strengthened to ensure that information about training needs is made available to providers and information about the supply of training is accessible to statistical agencies.

Along with improving the production of agricultural statistics, another issue the training component will have to tackle is lack of skills among medium- and top-level statistical staff to communicate with data users, especially policy and decision makers, in order to both understand what their data needs are and help them understand the importance of the data statisticians can produce for evidence-based policy and decision making.

Developing such skills along with periodic user-producer workshops and user training on the use of data will increase policy makers' awareness of the importance of good statistics in their work, which in turn will positively affect the sustainability of the statistical system by ensuring the appropriate budget allocations for producing policy-relevant data.

The training component defines a unified and structured approach for training, supports and strengthens the regional and national programs, and, at the same time, addresses the training challenges that are cross-cutting across regions. The training component will have global, regional, and country level elements. Their interrelationship is described in table 2.1 in chapter 2.

Global Responsibilities

The Global Office will provide a description of the core competencies (basic skills) and the corresponding qualifications required to produce agricultural and rural statistics. The level of training required for the various positions, ranging from clerical worker to senior mathematical statistician, will be identified. The Global Office will also prepare face to face and e-learning materials for training, to be used by Regional training centers and national statistics offices. The training process itself will be actually implemented at the regional level and in the countries. The training materials will cover all the three pillars of the Global Strategy:

- *Pillar I.* Training materials will focus on the methods for collecting reliable data on the minimum set of core items. Special attention will be given to issues such as treatment of mixed crops, enumeration of livestock in nomadic areas, measurement of livestock production, and the new issues resulting from the expanded scope of agricultural statistics (social, food security, environmental, forestry, and fishery). This material will cover the training of a wide range of personnel, from enumerators to midlevel management.
- *Pillar II.* Training materials will focus on issues related to integrating agricultural statistics into the national statistical system, creating the master frame, designing the integrated survey system (survey design, sampling theory, estimation, estimation errors), and developing data management systems (maintaining the databases, validating and reconciling data from different sources, and disseminating data).
- *Pillar III.* Training materials will focus on developing and strengthening the institutional and organizational capacities to ensure the sustainability of the agricultural statistics systems (drafting statistics-related legislation, formulating projects and action plans, managing skills, identifying and monitoring training needs). Training materials will be developed to improve communication and interactions with data users, especially policy and decision makers. This material will cover the training of top and midlevel management.

Special emphasis will be placed on e-learning as a powerful and cost-effective modern training tool. A strong effort will be made as well to liaise with training programs planned or under way in related areas of statistics to ensure consistency of terms, concepts, and methodologies.

The preparation of training materials will start by applying specially developed questionnaires to countries to identify their training needs and to selected training centers to assess their capabilities to provide training. Universities will be widely involved in this process. The gaps between training needs and what is available will be filled by developing training materials on the basis of the available research materials and technical assistance guidelines and new findings from the research component.

Along with preparing training materials and e-learning tools, the Global Office will facilitate access to training by maintaining and publishing information about the training courses available at major training centers and websites with e-learning materials. The Global Office will promote an exchange of skills, expertise, and experience between training centers across regions by means of twinning arrangements and will compile, document, and disseminate good practices in the design and delivery of training programs. The Global Office will also organize the training of resource persons (trainers) for regional training centers.

Regional Responsibilities

At the regional level, activities include the following:

- Assessing training needs during the second stage of the country assessment. This information will be used to group countries according to the levels of core skills and competencies of their statistical staffs. Depending on the training needs, training programs will be developed for the regional centers based on materials created at the global level.
- Adapting the standards for training developed by the Global Office to meet regional requirements.
- Ensuring that countries are aware of and know how to use the e-learning materials.
- Promoting through networks established between the national statistical offices and sectoral agencies the sharing of training programs and knowledge transfer for statistical skills that cut across sectors.
- Supporting technically and financially on-the-job (in-service) training in the countries.
- Selecting regional training centers and strengthening them by identifying gaps in their training programs and upgrading the skills and capacities of their staffs.
- Upgrading the training infrastructure of regional centers, including providing computer hardware and software, audiovisual equipment, and associated items as well as material for libraries, and organizing short courses to be conducted by training centers.
- Supporting scholarships and participation of staff from statistical agencies in the approved short courses.

Country Responsibilities

Activities at the country level will mostly entail identifying training needs, contributing examples of good practices in design and delivery of training programs, selecting the staff to attend regional training centers as well as for scholarships and short-term courses, organizing in-service training, and ensuring access to online e-learning materials.

Specifically, countries will ensure that training needs are identified during the second stage of the country assessment. In addition, they will ensure that staff have access to websites containing e-learning materials, select candidates for training in training centers, organize short in-service training courses, and nominate staff for scholarships and participation in approved advanced training courses.

The outcomes of the training component will be the following:

- More staff trained to produce, analyze, and disseminate agricultural and rural data as required by the Global Strategy. In particular:
 - Core skills and competencies will be restored.
 - The current statistical staff will gain the appropriate educational foundation for the positions they are occupying.
 - Statistical staff will gain access to new, specialized knowledge in different areas, including in the design and management of agricultural surveys, sampling theory, geographic information systems (GIS), and food security statistics.
 - Statistical staff will be trained in new methods and procedures in agricultural statistics such as the processing and analysis of agricultural data.
 - The skills of managers will be strengthened, especially in areas such as human resource management, training needs analysis, and strategic planning.
- More effective training centers equipped with standard courses, curricula, materials and facilities, access to expertise and related resources, and networked with partner institutions
- More sustained training programs able to address the needs identified by assessment of knowledge and skills; more scholarships and fellowships offered that are aligned with the existing competencies.
- More effective interactions between the users and producers of statistical information, resulting in policy and decision makers' greater awareness of the importance of good statistical data, which will benefit the sustainability of agricultural statistics systems by ensuring the appropriate allocations in national budgets.

Chapter 7

Research Plan

The goal of the research plan is to contribute to a significant improvement in the quality, reliability and cost-effectiveness of agricultural statistics in developing countries. This goal will be achieved providing a framework for coordinated efforts of experts in various Regions to address the most important methodological issues and gaps for effective data collection, processing and dissemination on current and emerging demand for statistics to inform relevant policy debate for developing countries. The role of the research plan is to develop countries capacity to implement improved and cost effective methods rather than developing research developing research capacity in each country.

Research Topics

Through a long process, including a survey undertaken among key stakeholders in agricultural statistics and various meetings (in Tunis in February 2010, in Rome FAO Headquarter, 13 and 14 September 2010), some research topics have been prioritised according to their links to the main pillars of the Global Strategy and their technical relevance for developing countries. The draft proposal for the Research Component was presented at the ICAS-V, see Keita and Carfagna (2010), in order to receive feedback and contributions, particularly from the Friends of Chair task team for the research component.

Afterwards, FAO Statistics Division presented the proposal for the research topics to be included in the Global Action Plan and the strategy for conducting the research to the Joint Research Centre of the European Commission (JRC). The main purpose of the presentation was to discuss and receive feedback from the JRC concerning the relevance of the proposed topics and existing research gaps. The relevance of the research topics was recognized and it was suggested to add the improvement of methods for estimating post harvest loss and use of pesticides in the list of prioritised research topics. The research topics and the strategy for implementation were also discussed with some FAO Divisions and other institutions.

The research topics are grouped in thematic domains, which are described in the following sections.

Creating an appropriate reference framework – The second pillar of the Global Strategy is the integration of agriculture into the national statistical systems. Guidelines on developing an integrated agricultural programme will be prepared which will aim at identifying and addressing policy makers' needs and developing solutions for the organization and the legal framework which best fits the characteristics of countries. Also, guidelines on development of Sector Strategic Plans for Agricultural Statistics for mainstreaming agriculture into the NSDS will be prepared. The guidelines will address the difficulties which can be faced when different organizations have to cooperate to mainstream agriculture into the national statistical system and to develop an integrated agricultural statistics programme. Finally, technical solutions for the integrated survey framework will be developed and corresponding guidelines prepared. Strategies and good practices already adopted by some countries will be considered

in order to identify appropriate solutions, taking into account the specificities of countries and stakeholders.

Identifying the most appropriate master frame for the integrated survey – The integration of agriculture into the national statistical systems will begin with the development of a master sample frame for agriculture which will be the foundation for all data collections based on sample surveys or censuses. The master sample frame must provide the basis for the selection of probability based samples of farms and households with the capability to link the farm characteristics with the household and then connect both to the land cover and use dimensions.

Research will be conducted for improving the use of GPS, GIS and remote sensing for setting up a master sampling frame for integrated survey for the various categories of countries, according to the landscape, the economic structure, the size of farms, the spatial distribution of important crops and livestock species, and the kind of data sources available in the country. The development of a master sampling frame will take duly into account the data and information from Population and Agricultural Censuses, particularly the Enumeration Area information used by many countries as Primary Sampling Units. The research will also identify the most appropriate list frame, multiple frame or area frame for the different categories of countries (point frame, square segments, segments with physical boundaries, the size of the segments etc.). Finally, it will focus on the improvement of methods for linking area frames with list frames.

Improving data collection methods – A satisfactory solution has not yet been found for many data collection problems. Research efforts seek accurate and cost-effective methods for improving estimates of crop area and yield, particularly in presence of mixed crops, repeated cropping, continuous cropping, and for root crops.

Attention will be devoted also to the development of methods for estimating post-harvest loss, and for measuring the use of fertilizers and pesticides; major inputs that have environmental consequences.

Research will be devoted to the improvement of methods for collecting data on livestock, including cattle, sheep, pigs, goats, and poultry because livestock production is a major contributor to food supply and income. Consumption increases as countries develop, therefore resulting in more livestock consuming grain and adding to methane emissions.

Accurate estimation of livestock numbers and production is a challenge in many countries, particularly in Africa (FAO, 1992) because of the nomadic and semi-nomadic livestock systems. Social constraints also create difficulties in obtaining accurate numbers on livestock in pastoral societies and estimation of livestock products, especially with regards to small animals.

Many of the above-mentioned considerations in relation to methodology also apply to fisheries and aquaculture which provide an important source of food security, nutrition (especially protein and trace nutrients) and livelihoods in many countries. In order to collect

data on inland fisheries and aquaculture (both commercial and subsistence), appropriate methods for data collection and estimation need to be developed (FAO 1997; FAO 1999).

New technologies such as GPS, PDA, remotely sensed data from satellite and aircraft as well as geographic information systems (GIS) will play an important role in the development of cost effective data collection methods. Research will be conducted for assessing their effectiveness and cost-efficiency in developing countries.

The improvement of data collection methods and analysis of irrigated area and use of water for irrigation will be pursued as well.

The activities under this theme will start with taking stock of on-going methodological work being conducted by several institutions such as FAO, the World Bank and others in order to build synergy and complementarities. The table in appendix D for example provides a list of some activities largely developed by FAO and that need to be completed. The World Bank LSMS projects are also undertaking studies to improve data collection methods.

Box 7.1 LSMS

The World Bank is testing the addition of an agriculture module to the Living Standards Measurement Study being conducted in several African countries. The addition of this module will provide valuable input about the use of household surveys for agricultural statistics.

Improving the methodology for food security data and indicators– The social dimension of the Global Strategy covers the need to reduce risk and vulnerability, especially for food security. The quality of supply-utilization accounts and of food balance sheets is linked to the quality of the food availability data, mainly production, trade and stock. The quality of data on food stocks is very low in many countries; thus, research is needed to identify strategies (survey designs, sample designs, estimators etc.) for producing more reliable data. Moreover, due to the influence of food stocks on the international prices, better methods for estimating stocks will allow better forecast of food price crisis.

Edible forest products are an important element of the diet of some populations; thus estimates of the quantities harvested are needed to avoid a downwards bias in the estimate of food available, an essential input data for the estimate of the prevalence of undernourished.

The research will also analyse the possibility of improving the methodology adopted by FAO for estimating the prevalence of undernourished taking advantage of other data sources, like households' surveys (e.g. LSMS) and nutrition indicators.

The activities in this thematic area will be well coordinated with on-going developments regarding Food and Nutrition Security Information System by FAO and other partners as well as improving food security measures/metrics/indicators.

The recent FAO/WFP Joint Strategy on Information System for Food and Nutrition System (ISFNS) includes an important component on developing standards, tools and methods for generating Food and Nutrition Security Information and Statistics. Partnership with other key agencies is also promoted through the newly established Food Security Information Network (FSIN) for developing standardised methods.

The development and use by countries of sound methods to produce reliable basic data on food availability (production, stock, trade) will support the development of food security information systems and indicators.

Improving the methodology for market statistics – Market information affects agricultural activities and farmers’ decisions. Most important is timely estimates of supply and demand, ideally before harvest. Improvement of methods for crop production estimates and forecasts are included under “data collection methods” and “data analysis”. Attention will be devoted to the improvement of methods for estimating farm gate prices, for collecting data on agriculture rural and border market prices and for estimating informal cross border trade data. Factors and product markets affecting agricultural activities will also be analysed, as well as the impact of bio-fuels on the market.

This research will complement and support the activities foreseen under the Agricultural Market Information System (AMIS) recently established under the auspices of the G20 with FAO as Secretariat. Methodological improvements in collecting market related data will support AMIS which focuses on selected crops and countries.

Improving the methodology for data analysis – Basic information has to be carefully analysed in order to understand and monitor the agricultural sector development issues. Reconciliation of census data with survey data, determination of users’ information needs for decision making and use of small area estimation methods for improving agricultural statistics are particularly important in this domain. Methods for data analysis need to be developed or improved to inform policy decisions and monitor their impact on household incomes, rural development, and the environment.

Policy makers need statistics on small domains. A wide literature is available on small area estimation methods. Small area models are strongly dependent on the kind of variable to be estimated and on the kind of auxiliary variable available. Research will be conducted for improving estimation methods for agricultural variables on small domains, taking into account possible kinds of auxiliary variables. Many systems for crop forecasting and early warning have been developed in the last decades since they can be vital in some developing countries. However, most of them tend to produce reliable results under ordinary conditions, but hardly under extreme conditions which are particularly important for policy issues. Thus a significant improvement is needed in the analysis of various sources of data (remote sensing data can be one of these sources) and in the development of models.

Improving the methodology for using administrative data – In developed countries, governmental interventions such as subsidies, regulation and legislation often require agricultural holders to report production information. Land ownership and cadastral surveys provide useful information for constructing registers. Many references can be given on the use of administrative data for agricultural statistics, see Carfagna and Carfagna, 2010, ESSnet ISAD, 2008, Lavallée, 2005, Selander et al. 1998, Wallgren and Wallgren, 1999, 2007 and 2009. However, more research is needed for identifying where, how and under which conditions, administrative data can be used for producing agricultural, rural and agri-environmental statistics, with particular reference to developing countries. First of all, in many developing countries, administrative data have to be improved and specific guidelines will be created for this purpose.

Identifying appropriate indicators and collection methods for gender related data and indicators – Recent studies show that considerable difference exists in the level of use of inputs and other means of production and consequently on the yields and economical sustainability of farms managed by women. Several organisations are collecting data and making analysis on this topic. Ongoing and completed projects will be analysed and specific research will be conducted in order to identify appropriate indicators, corresponding data to be collected and survey designs.

Identifying appropriate indicators and collection methods for small scale fisheries including subsistence fisheries – In a large number of developing countries, capture fisheries (inland and marine) are major contributors to food and income for rural households. Small scale fisheries are also an important source of food supply and income generation. However reliable estimates are rarely produced, due to difficulties in frame identification and data collection (see de Graaf G.J et al., 2011). The problem of estimating subsistence fisheries will be addressed with particular reference to the following topics:

- Identification of the frame
- Development of methods for appropriate data collection (e.g. integration of fisheries in population census and/or agriculture census, see FAO. 1999)
- Estimation of self-consumption.

Better integration of geographic information and statistics – The research agenda will address the need for better integration of geographic information and statistics. Particularly, it will propose new, more effective and robust methods for the use of maps to produce more accurate agricultural and rural statistics; especially to connect economic and social indicators to land use. In addition, more efficient methods will be studied for area frame construction, stratification, and calibration especially for improving models for small area estimation using geographic information as auxiliary variables. Research is still needed also for developing robust and statistically based methods for spatial disaggregation and for integrating various kinds of geographical information and geo-referenced survey data, which is essential for crop forecasting and early warning.

Improving the methodology for using remote sensing – The development of more efficient and accurate methods is necessary for using remote sensing for crop area and yield estimation, crop forecasting and early warning, forestry and deforestation and land use/land cover monitoring, e.g. automatic change detection and quality control and validation of land cover data bases; see, for instance, Gallego, 2004, Carfagna and Gallego, 2005 and Carfagna and Marzioletti (2009 a, b) for a methodological contribution.

Remote sensing data have been used for producing vegetation indices that show overall crop conditions plus information about changes in land cover/use. Wide literature is available in these fields, for a recent review see Gallego et al., 2010, Doraiswamy et al., 2005, Dorigo et al., 2007, Hannerz and Lotsch, 2008. However, decision makers seldom use this kind of information because the reliability of the methods is not very high, thus research will be devoted to its improvement.

A document on best practices for crop area estimation with remote sensing has been prepared by GEOSS (GEOSS, 2009). Remote sensing data can be used for estimating the cultivated area of countries or improving the precision of estimates for specific crops. In this field, the research activities will be devoted to the development of more efficient statistical methods and the assessment of their cost-effectiveness in developing countries.

A major topic for research is the improvement of methods for integrating remote sensing data and ground surveys. Other research topics are the use of AFRICOVER or more detailed land use/cover data-bases for stratification, the use of remote sensing data for small area estimation, the assessment of the most appropriate area frame for specific landscape types and the possibility of combining households surveys with remotely sensed data (see Gallego et al. 2010, Carfagna and Gallego 2005, FAO, 1988).

Identifying appropriate indicators and collection methods for agri-environment – The agri-environmental topics have been debated for a long time in developed countries with much focus on what the scientists would like to know and little on what can be measured or estimated. Thus, much research is still necessary in order to define the indicators to be adopted and consequently the guidelines on the data to be collected, the most appropriate sample units and sample design, the interactions among the variables to be investigated, the precisions to be reached and so on. These topics will be faced by the research. Existing literature will be analyzed and the organizations and the institutions working in this topic will be contacted for identifying the research gaps (see for example Selenius, 2010). Also the Italian Ministry of Agriculture is carrying out some research activities in this field, mainly devoted to delimitation of High Nature Value Farmland, which is an estimate of the distribution patterns on the basis of land cover and biodiversity data.

The interaction between climate change, environment, and agriculture will be investigated and particular attention will be devoted to the impact of bio-fuel and the use of Genetically Modified Organisms (GMO) on biodiversity and the environment.

Deforestation has a very strong impact on the climate and the environment, particularly in some areas of the world; thus methods for monitoring deforestation and, in general, land cover have to be improved and made available for developing countries, also because a fundamental way to evaluate agriculture's impact on the environment is to monitor changes in land cover and use.

Appendix C shows the prioritized thematic domains, corresponding research topics and the pillars of the Strategy related to each research topic.

Implementation of the research plan

Main research activities to be developed at global, regional and country levels are described in table 1. The Global Office will promote, coordinate, and undertake the research on the relevant topics. It will facilitate contacts and exchange of information among relevant Divisions in FAO, Universities, other Research Institutes, Statistics Offices and Ministries of Agriculture, in order to build synergies and avoid duplication of efforts in developing advanced and cost-effective methodologies, tools and guidelines. Networking will be an important element of the implementation strategy. A living data base will be created that will

include ongoing and relevant research projects conducted all over the world in order to facilitate access and sharing of knowledge. This data base will be complemented by an inventory of the best practices based on the results of the relevant research projects. The inventory and the data base will be an instrument for transmitting knowledge and best practices not only from developed to developing countries, but also among developing countries.

The outputs expected from the Research Plan and the corresponding activities to be undertaken are described in Appendix E. The Global Office will work with the most qualified regional and international structures for a decentralized implementation. Subcontracts will be assigned on tender basis or on comparative advantage basis (whenever possible to institutions located in developing countries) depending on the topic.

Mobilisation of resources and setting of the administrative arrangements for the Action Plan takes time. Many issues identified as priority topics could be implemented as soon as corresponding resources are available with minimum administrative arrangements. In fact, work is going on for some of the topics (quick wins) by various institutions, including FAO, and what is needed is to finalise the activities and produce the guidelines. Other topics require limited resources to produce highly needed technical guidelines. Appendix D shows the list of these topics.

Outcome of the Research Plan - The outcome of the Research Plan will be advanced and cost-effective methodologies, tools, and standards developed and disseminated for the use of agricultural statisticians in developing countries. These will be in the form of methodological publications which will be the basis for guidelines, handbooks, and documentation of good practices in priority research topics to foster the production of reliable statistics. Specific outputs are:

1. Reports including, for each priority research topic:
 - ongoing or already completed research activities;
 - review of relevant literature («état des lieux» and «state of the art»);
 - gaps analysis and remaining methodological issues identified; and
 - potential partner technical institutions.
2. Empirical studies, where needed, designed and field-tested by relevant technical partner institutions;
3. Methodological publications and technical reports on findings, standards, and recommendations for possible solutions to methodological issues prepared, peer-reviewed, and validated by experts. These publications will be the basis for developing training material, guidelines and handbooks on innovative methods.

Chapter 8

Process to Implement the Global Strategy, Indicative Budget, and Timeline

This chapter presents an overview of the work plan, timeline, and expected costs for implementing the global, regional, and national activities identified in the Global Action Plan. It took decades for the quality and availability of agricultural statistics to decline to the current situation. And so it will take many years to rebuild the system for agricultural statistics and also prepare it to deal with emerging data requirements. The Global Strategy provides the overall framework for rebuilding the national statistical systems while choosing from many kinds of methodology. Not all methods will be needed in every country. It will be up to each country to make the choices and establish the priorities for implementation. In view of these points, the action plan should include steps to pilot test implementation strategies in a small set of countries with varying degrees of statistical capacity in order to

- Obtain a quick assessment of the steps needed to implement the different methodologies, prioritize the implementation stages, and determine the associated costs
- Develop an overall scalable and flexible implementation plan that can be adjusted for changes in funding support.

Process to Implement the Global Strategy

The sections that follow describe the activities that will take place in parallel as implementation proceeds.

The roll-out of the Action Plan will begin with setting up both a Global Office at FAO and a Global Steering Committee. The Global Office will coordinate and support the preparation of detailed regional programs in cooperation with selected regional institutions where such programs have not been prepared.

The Global Office will directly support implementation of the regional-level activities. It will be responsible for the preparation of technical standards and guidelines to support the technical assistance and training programs, which can begin while the testing in the pilot countries is under way. Work on the priority elements of the research plan and testing of methodologies needed to meet the emerging data requirements can also begin. These elements are critical to ensuring successful, cost-effective implementation of the strategy.

Regional Offices and Regional Steering Committees will be established as well. The Regional Offices will start by coordinating and supporting the country assessment activities, to be followed by grouping of countries and selecting a set of priority countries for in-depth assessments and preparing country proposals for funding.

Selection of Pilot Countries

In order to start the activities in the first year without waiting for the completion of country assessments in all countries, the information available from international agencies such as FAO, the World Bank, and other partners will be used to select a small subset of 18–20 countries. These pilot countries will be targeted to provide input for a variety of situations to be transferred to other countries in the next year.

To ensure successful implementation and the conditions needed for sustainability, the pilot countries will meet the following criteria:

- *Political will and commitment* in the country to improve the agricultural statistics and to provide the required government contributions in cash or in kind. The country should also demonstrate a willingness to build an integrated system of agricultural statistics involving all the data producers and data users, in particular the national statistics office and the ministry of agriculture and other line ministries concerned. In fact, strong and explicit commitment by governments to continue to support the activities undertaken under the Global Strategy is essential for sustainability.
- Existence of *active donor interest* in the country to provide support for implementation of the activities
- Possible complementarities with the relevant *ongoing planning activities* such as the National Strategies for the Development of Statistics process, which will facilitate the integration of agriculture statistics into the national statistical system
- Complementarities with other relevant *ongoing or planned large-scale statistical activities* such as population censuses, agricultural censuses, or household surveys, which could serve as the foundation of the statistical system and offer cost-effective solutions in choice of methodology. A population or an agricultural census is an opportunity to build master sampling frames to support ongoing surveys.

In addition, the selection of the pilot countries will be based on the following considerations:

- *Importance of agriculture*
 - For the national economy—percentage of agricultural value added to the total gross domestic product (GDP).
 - Contribution of the country to global food production—share of country's cereal production to world cereal production.
- *Share of rural population*
- *Level of statistical development.*

In selecting pilot countries, priority will be given to countries in which agriculture is important in the economy and the country contributes significantly to global food production. However, the pilot countries must also include countries at different levels of statistical development with a mix of low- and higher-level countries.

The 18–20 countries selected for the pilot study during the first year of the strategy correspond to an average of three to four countries in each of the four regions and five to 8 countries in Africa Region. The pilot countries will be fast-tracked through the

implementation steps, to be followed by all other countries as described shortly. Country proposals for funding and technical assistance will be prepared for those in the pilot study.

During this period, all remaining countries will benefit from the activities being conducted at the regional and global levels to produce public goods such as methodological guidelines and training materials.

The following sections provide more detail on the implementation steps and how they lead to the requirements for funding support and implementation of activities.

Country Assessments

During the first year and in parallel to the implementation of activities in the 18–20 pilot countries, country assessments will be carried out in all countries using a Standard Country Assessment Questionnaire (CAQ). The information collected will be used to compile standard indicators for grouping countries and selection of priority countries for second stage in-depth assessment as described below.

Groupings of Countries

Based on the results of the country assessment, countries will be classified within the following broad categories in order to determine the extent of assistance required and the expected costs:

- *Level 5.* Country is supplying more than 80 percent of the minimum set of core data on a regular basis and has recently conducted an agricultural census or population census with questions on agriculture. Country has an existing NSDS with an agriculture component and a functioning coordination system in place. Country has elements of a master sample frame from the census or use of area frames.
- *Level 4.* Country produces 50–80 percent of the core data items and has over two-thirds of the other elements noted for level 5 in place.
- *Level 3.* Country produces 30–50 percent of the core data items and has about half of the level 5 elements in place.
- *Level 2.* Country produces less than 30 percent of the core data items and has less than a third of the level 5 elements in place
- *Level 1* (fragile and post-conflict countries). Few if any core data items are available, and little or no statistical infrastructure is in place. Resources are very limited or nonexistent.

Countries in level 5 and some in level 4 may have the statistical capacity to implement the Global Strategy directly using the documentation provided for technical assistance and training. Some may need short-term technical assistance to address a specific problem in their system, but in general can proceed at their own pace to implement the elements of the Global Strategy appropriate for their country.

The rest of the countries at level 4 and many of the countries at level 3 will be the ones for which most of the country-level activities will be applicable.

At the other end of the spectrum (the remaining countries at level 3 and countries at level 2 and 1), the focus will be on building a national statistical system and advocacy for making

adequate resources available. In other words, technical assistance and training can contribute little to implementing technical activities if there is insufficient staff and infrastructure. Many of these countries will be on a timeline extending many years beyond the time needed for the level 4 and 5 countries.

As the countries mostly in levels 1–3 complete the first stage of the assessment and become ready to begin the steps to implement the Global Strategy, they will have to be individually assessed to determine the entry points into the Global Action Plan and the technical assistance and training required. The cost estimates that follow are based on the assumption that not all countries will be able to begin the implementation steps at the same time or proceed at the same pace.

Each country's response to the first stage of the country assessment will be reviewed by the regional and global coordinators in order to group countries in the categories just described and to identify candidates for the first phase of the implementation. The target for that phase is to include 90 countries (40 countries in Africa and 50 countries in the other regions) during the first five years.

Identification of Countries for the First Phase

The main requirements for identifying countries are spelled out in the first four criteria used to select pilot countries. In particular, all countries will be asked to confirm and demonstrate their willingness to participate and their commitment to supporting implementation of the Global Strategy. They will also need to demonstrate their political will and commitment to seeking the necessary resources to ensure sustainable development, as demonstrated by implementation of a SSPARS showing the resources coming from the national system or adequate budgetary provisions for implementation of agricultural statistics activities. This condition is essential to the success of the Action Plan. In fact the Plan focuses on capacity building and Countries will be responsible for providing the resources needed to conduct data collection activities to produce the minimum set of core data.

Countries' responses to the first phase of the assessment and their desire to begin implementation will be used to determine the first set of countries for an in-depth assessment.

In-depth Assessment and Preparation of Country Proposals

After the first phase of the country assessment, an in-depth evaluation will be conducted through country visits by the regional coordinators. This second stage of the country assessment will include a review of the quality of the data currently being provided, the needs of users and an analysis of gaps and the improvements needed. The regional coordinators will assist countries in identifying their priority assistance needs and prepare country proposals for funding that state the work plan and requirements for technical assistance and training. The country proposals, with cost estimates, will be submitted to the Regional Steering Committee for approval and disbursement of funds by the Regional participating Partner. The output of the pilot study will provide input for this stage.

Once the country proposals have been accepted for funding support, the global and regional offices will ensure that funding is provided for technical assistance and training to support the implementation efforts.

Implementation of Country Activities

At the country level, overall implementation will be articulated in the National Strategies for the Development of Statistics. Development of the SSPARS will be a major activity in many countries, supported by technical assistance and training. Some countries will already have sector strategic plans in place, which only have to be revised to meet the requirements of the Global Strategy. Those without sector strategic plans will face a lengthy time period for the implementation because they will also need to mobilize resources to maintain their statistical programs at a sustainable level. However, depending on the country situation, activities to strengthen capacity and improve the methods, availability, and quality of statistics can take place in parallel with the preparation of the sector strategic plans.

Indicative Budget to Implement the Global Action Plan

The estimated funding requirements for the Global Action Plan build from the overview of responsibilities shown in table 2.1 in chapter 2. These estimates are for funding requirements for country, regional and global level activities

Table 8.1 lists the estimated costs at the country, regional, and global levels for governance, country assessment, technical assistance, training, and research. The cost estimates are shown for the first phase of five years, which is broken down into the initial period of three years and the second period of two years the initial period cost includes an estimate of start-up costs for pilot testing in the 18–20 countries and conducting priority methodological research activities (about 15 million USD).

Cost of Country-Level Activities

The estimation process began by costing country activities as listed in chapter 2. The estimates are based on FAO and World Bank experience in implementing similar activities (average costs are used). The main activities are the following (depending on country needs):

- Assessing and preparing country proposal based on national priorities
- Strengthening the national governance
- Developing SSPARS as a component of NSDS
- Harmonizing and disseminating data
- Applying new, cost-effective methods
- Training.

The next step was to estimate the amount of ongoing technical cooperation funding likely to already be available in countries. This estimation was carried out by calculating the support for agricultural statistics provided by members of the Partnership in Statistics for Development in the 21st Century based on the PARIS21's *Partner Report on Support to Statistics 2010 Round*. The partners provided about US\$2.9 million a year for agriculture-related support and \$1.6 million for NSDS support for non-African regions, for a total of \$4.5 million (average of about 45000 US\$ per country per year). These figures do not include multiregional projects, which include Africa. They also do not include multi-domain projects, which include agricultural statistics as well as other statistics. However, the figures provide an order of magnitude of past support and it is assumed that the same level of support will likely be provided in the future. The budget estimates that follow are in additional funding required taking into account the amounts supporting work already under way.

It is proposed to cover 90 countries during the first phase of implementation, with an initial period of three years (including initial pilot phase), followed by two years in which implementation will be accelerated.

The estimated cost of implementing country-level activities is 34.715 million USD.

Cost of Regional-Level Activities

The main activities at the regional level will be as follows:

- Supporting the country assessments and preparation and submission of national funding proposals
- Providing and coordinating technical assistance to countries
- Supporting twinning arrangements, organizing study tours, facilitating exchanges of experience between countries
- Contributing to research efforts
- Adapting advocacy materials prepared at the global level to regional conditions
- Organizing regional workshops, training of trainers, and so forth
- Adapting new methodological guidelines, including use of digital technology to regional requirements and developing corresponding curricula
- Supporting improvements in the capabilities of the regional training centers
- Supporting implementation of training programmes and scholarships
- Monitoring and evaluating of country-level and regional-level activities and reporting on them.

Because of the gradual process just described for implementation, in most Regions, only one regional coordinator and one support staff will be needed at the regional level as full-time staff because an average of two to three countries will be selected in each region annually. The regional institution will provide the support staff as an in-kind contribution. It is estimated that the coordinator will provide about 19 weeks of service to each country. The rest of his or her time will be spent on regional activities. Provisions for consultancy services as required will be made available to complement the support provided by the full-time staff.

The estimated cost of implementing regional-level activities is 24.885 million USD.

Cost of Global-Level Activities

The activities at the global level will support the regional offices in the development of their detailed activity programs and the implementation of those programs. The support will include:

- Organizing meetings of the Steering Committee
- Supporting preparation of regional programs
- Preparing standards and guidelines
- Training the trainers
- Organizing global-level workshops
- Preparing advocacy materials
- Facilitating cross-regional exchanges and so forth

- Coordinating and implementing the methodological research component using centers of excellence in various regions
- Carrying out interregional coordination and overall monitoring and evaluation of the action plan.

The Global Office will be in charge of these activities. The office will comprise a coordinator, a senior statistician responsible for research, two statisticians, an information technology expert (part-time), an accounting clerk, and support staff. The senior research statistician is expected to spend half of his or her time undertaking research, and therefore only half of that salary will be budgeted under the Global Office. Because the two statisticians are expected to spend all of their time on technical assistance and training activities doing technical work, their salaries are supposed to be covered under the technical assistance and training budget. FAO is also expected to provide an in-kind contribution to the accounting and support staff. In addition, FAO will arrange for the director of the FAO Statistics Division and a principal officer to support the work of the Global Office on a part-time basis. The FAO in-kind contribution with staff time is estimated at \$1.74 million.

The estimated cost of implementing global-level activities is 17.394 million USD.

The overall cost for the five years (including administrative cost of 5.390 million USD) is estimated at 82.384 million USD. The start-up cost of initiating the activities and implementing the plan in the 18–20 pilot countries for the first three years is estimated at about 15 million USD. The estimations are summarized in table 8.1.

Table 8.1 Indicative Budget for Implementation of Global Action Plan

Thousands of U.S. dollars

	3 years	2 years	TOTAL
Country level	19,286	15,429	34,715
Regional level (regional training and TA activities)	14,605	10,280	24,885
Global level	10,573	6,821	17,394
Sub total	44,464	32,530	76,994
Administrative cost	3,113	2,277	5,390
TOTAL	47,577	34,807	82,384

During the last two years, a considerable amount of work has been carried out on preparing the Global Strategy and the Global Action Plan. FAO and the World Bank have contributed staff time and consultants. The overall FAO contribution for preparation is estimated at about \$1 million, and the World Bank contribution is estimated to be over \$.5 million.

As specified above, the budget to implement the Global Strategy does not include funding required for conducting data collection activities and is mainly aimed at preparation of global and regional public goods and supporting country capacity development. Partner support to

countries through direct assistance or other modalities as well as country commitment and support will be critical for conducting data collection activities to produce the minimum set of core data.

Funding Strategy

The objective of the funding strategy is to enhance the availability, transparency, efficiency and effectiveness of the provision of substantial and additional financial resources, and to strengthen international cooperation to support and complement the efforts of developing countries and countries with economies in transition in the implementation of the Global Plan of Action.

The Funding Strategy encompasses different types of resources:

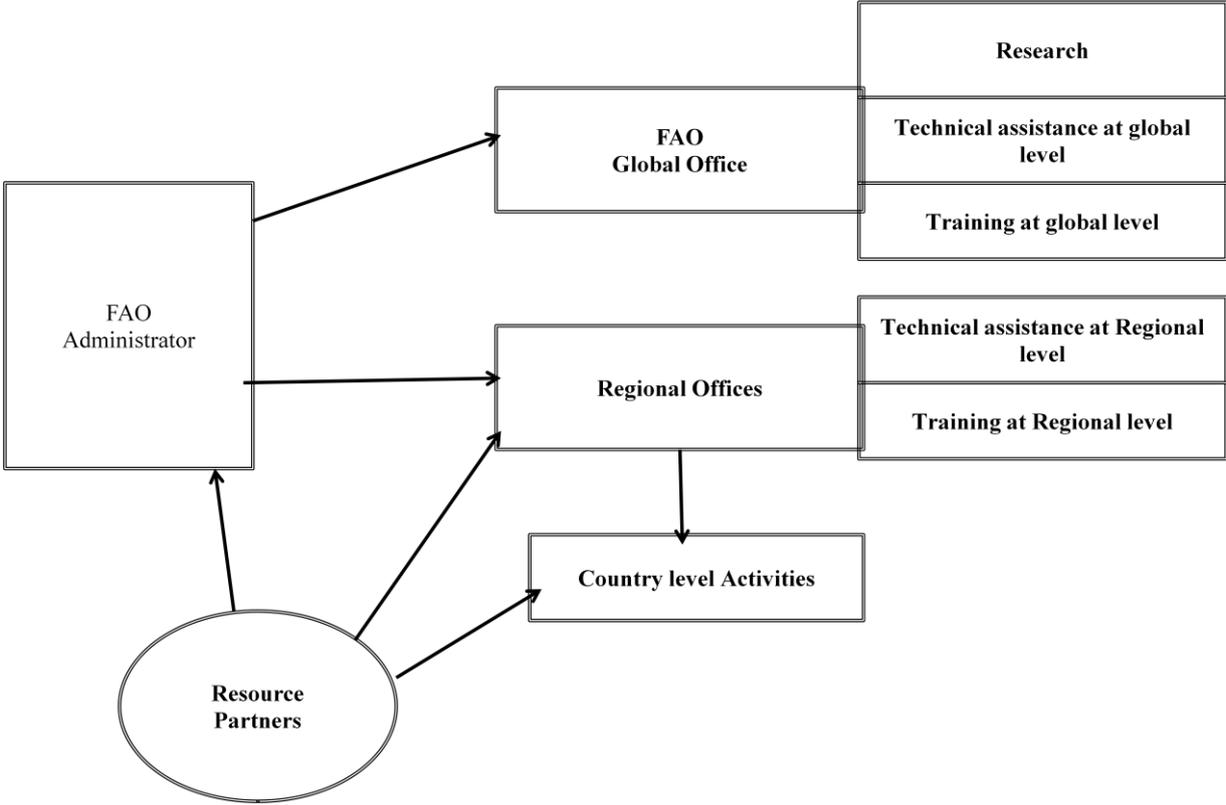
1. Voluntary contributions to the Global Trust Fund for Implementing the Global Strategy to Improve Agricultural and Rural Statistics
2. Bilateral agreements Resource Partner - FAO
3. Bilateral agreements Resource Partner - Country
4. Agreements between developing countries (South South cooperation agreements)
5. Regular Programme resources of FAO (TCP Projects and direct assistance) dedicated to the implementation of the Global Strategy.
6. Voluntary contribution to a Regional Fund managed by a Regional Organization for country or regional level activities (see chart of the financial flow below).

In order to guarantee that regional or country level activities will be consistent with the general framework, the Regional Organizations will report on technical and financial aspects to the Global Office (see below).

Global Trust Fund. A Trust Fund will be established to consolidate the resource partners' contributions and ensure a stream of funding to support implementation of the Global Strategy at the global, regional, and national levels. The Global Trust Fund will be managed by the Administrator (A) for funding activities to be implemented by Participating Partners (PPs).

Administrator (A). Through consultation with key Partners, it has been agreed that FAO will serve as Administrator. The Administrator will hold in trust, as a legal owner, and administer the funds, which constitute the Global Trust Fund for the Global Strategy to improve agricultural Statistics, and will be accountable to the Global Steering Committee for the performance of its fiduciary responsibilities as set out in the Memorandum of Understanding. The Administrator accepts this appointment on the understanding that the Participating Partners (PP) assume full programmatic and financial accountability for the funds disbursed to them by the Administrator and will be directly accountable to the Global Steering Committee in accordance with the Participating Partners' own fiduciary framework, policies, guidelines and procedures.

Figure 8.1 Flow of the funds



On behalf of the Participating Partners, the Administrator will act as a financial intermediary and in this capacity, will:

- (a) Receive contributions from Resource Partners that wish to provide financial support to the Global Trust Fund;
- (b) Administer such funds received, in accordance with this Memorandum of Understanding including the provisions relating to winding up the Global Trust Fund Account and related matters;
- (c) Subject to availability of funds, disburse such available funds to each of the Participating Partners in accordance with instructions from the Global Steering Committee, taking into account the budget set out in the approved programmatic document, as amended in writing from time to time by the Global Steering Committee;
- (d) Compile and aggregate annual implementation results reports (narrative progress and financial reports) based on the annual implementation reports submitted by each of the Participating Partners. Consolidate statements and reports, based on submissions provided to the Administrator by each Participating Partner, as set forth in the TOR, and provide these to each Resource Partner that has contributed to the Global Trust Fund Account and to the Global Steering Committee;
- (e) Provide final reporting, including notification that the Global Trust Fund has been fully expended or has been wound up in accordance with the Fund TOR.
- (f) Disburse funds to the Participating Partners.

Participating Partners. The Participating Partners will receive funds from the Administrator and implement the activities in their areas of competence. They will be fully accountable for the use of funds received for the implementation of activities decided by the Global Steering

Committee. They will be responsible for the preparation of progress and financial reports according to agreed format and timing set by the Global Steering Committee. Regional Partners will also implement regional and country activities according to priorities defined by the Regional Steering Committees and report on their implementation to these Committees.

FAO Statistics Division will be the PP for global level activities, as agreed by the Global Steering Committee, and will receive funds from the Administrator accordingly. A clear delineation, including distinct reporting lines and an accountability framework, will be established and maintained within the FAO between its functions as Administrator and its functions as Participating Partner.

Indicative Timeline

Table 8.2 is an indicative timeline for developing and implementing the plan in various regions. In the Regions, a more detailed program will be prepared, as required, in close collaboration with the regional institutions that will also play a key role in the implementation process.

Table 8.2 Indicative Timeline for Implementation of the Action Plan

	2012	2013	2014	2015	2016
Global plan	Global plan completed and endorsed by the UNSC				
Regional programs	Regional programs for Africa, Asia, and Pacific completed	Regional programs for Latin America and Caribbean, Near East, and Commonwealth of Independent countries (CIS) and non-European Union (EU) countries completed			
Global governance	Global Office, Global Steering Committee				
Regional governance	Africa Regional Office, Africa Regional Steering Committee	Other regions			
Country assessments	Africa, Asia, Pacific, Latin America and Caribbean, Near East, and CIS and non-EU countries	Continue assessments	Continue assessments	Continue assessments	Continue assessments

Establishment of trust fund	Global Trust Fund				
Country plans and proposals for funding	Guidelines for preparation of country proposals	Selected countries	Africa, Asia, Pacific, Latin America and Caribbean, Near East, CIS and non-EU countries	Africa, Asia, Pacific, Latin America and Caribbean, Near East, CIS and non-EU countries	Africa, Asia, Pacific, Latin America and Caribbean, Near East, CIS and non-EU countries
Methodological research	Quick wins	Technical guidelines	Technical guidelines	Technical guidelines	Technical guidelines
Training	Guidelines	Training material and training activities in countries	Training material and training activities in countries	Training material and training activities in countries	Training material and training activities in countries
Technical Assistance	Guidelines	Technical assistance to countries	Technical assistance to countries	Technical assistance to countries	Technical assistance to countries
Countries develop/update/revise NSDS, SSPARS		Pilot countries	Remaining countries per their action plans	Remaining countries per their action plans	Remaining countries per their action plans
Countries start implementing the strategy per their SSPARS		Pilot countries	Remaining countries per their action plans	Remaining countries per their action plans	Remaining countries per their action plans

Chapter 9

Implementation, Monitoring, Evaluation, and Reporting

Implementation of the Global Action Plan will begin with the establishment of the global trust fund to support the capacity-building efforts it specifies. Guidelines will be established for the governance of the funds and how resources will be used in support of activities. They will also specify the mechanisms for reporting and accountability. Finally, the guidelines will lay out the process for applying for the funds and the approval, disbursement, and reporting processes.

These guidelines will take into account lessons learned from similar trust funds at the global and regional levels such as the trust fund for the International Comparison Program, and the Trust Funds for Statistical Capacity Building and the Statistics for Result Facility.

Monitoring, Evaluation, and Reporting

Detailed implementation guidelines will be prepared to support the practical activities, decision-making process, monitoring, and evaluation and reporting.

A large, complex plan like this one should be reviewed periodically. The key stakeholders, and especially recipients, implementing agencies, and resource partners would assess progress and decide on adjustments to the results matrix, the work plan, and the budget as well as other elements of the plan. Accordingly, a system for monitoring and reporting on implementation at every level has been established to ensure accountability. Performance indicators, targets, and the milestones to be met have been identified for each component and the governance mechanism, and they will be used to determine whether implementation is on course.

The progress and performance of the implementation of the Global Action Plan vis-à-vis the specific objectives to be achieved will be regularly assessed and evaluated. A logical framework with the appropriate performance and results indicators and targets appears in appendix G.

The implementation structures at every level will ensure that activities undertaken at each level are well monitored and evaluated. The implementation partners of the Global Strategy at the global and regional levels will also contribute to the execution of the overall monitoring and evaluation (M&E) plan. The overall M&E system will be coordinated by the Global Office based at FAO through the global governance mechanism. The system itself will be prepared and executed by M&E Officers in Global and Regional Offices.

Provision will be made for the Global Office to regularly monitor and supervise the utilization of allocated resources through field missions to regional offices, implementing agencies, and countries. The office will review the progress reports, annual audits, and financial statements submitted by the beneficiaries.

Implementation of plan activities at the regional and country levels will also be monitored through the regular participation of FAO in the regional coordination meetings and other important gatherings at the regional and subregional levels. The capacity-building events, such as the workshops in which beneficiaries will be meeting on the framework of plan implementation, will be used for the same purpose.

Follow-up activities will be organized at the regional level. These include internal and external evaluation, supervision missions, and assessment on the basis of objective indicators. Particular attention will be paid to the constraints encountered, with a view to resolving all bottlenecks.

On a quarterly and annual basis, the regional offices will prepare current and cumulative progress reports, indicating physical progress, procurement activities, and expenditures in accordance with the requirements of the funding agencies. Those reports will be consolidated at the global level within two months.

The supervision by the implementation structures will be closely linked to the plan's implementation schedule. It will include: (1) continuous supervision and implementation assistance through the missions to regions, implementing partners, and countries; (2) annual review of the work plan and budget; and (3) review of progress reports, procurement, correspondence, and implementation assistance to countries. Supervision will focus on the physical implementation, management performance, and financial control. The key areas will include: (1) coordination of office performance, implementation progress, and disbursement and accounting practices; (2) physical implementation of the targets as agreed upon; and (3) financial control—maintenance of adequate control at all levels of implementation.

The reporting system will track the progress of plan implementation, provide stakeholders with regular status updates related to the implementation plan, and alert them on any changes to the original plan.

Tools such as implementation plan status reports, charts, and standardized practices will be important for reporting progress on the implementation plan. These tools will allow implementation offices to monitor and control the implementation plan by providing timely information that can warn of potential problems or trends that may negatively affect planning for the implementation.

The following important tools will be used to monitor and evaluate progress in plan implementation at the national and regional levels:

- Annual national and regional reports on country progress toward providing the minimum set of core data
- Current/annual cumulative national and regional progress reports and impact assessments: to be produced by countries
- National and regional reports on appraisal/quality implementation plan evaluation.

It will be sufficient to develop summary reports that include graphical representations.

Communicating and sharing results with all stakeholders will allow them to meet their requirements as well as strengthen the sustainability of actions and results. Because experience and best practices will be gained and lessons will be learned, this information will be shared with other countries and partner organizations to strengthen overall statistical development.

The mechanism for a transparent and timely flow of data and information will be established. This type of communication network will be reinforced along the whole plan life cycle so that the visibility of the Global Strategy is maintained at the global, regional, and national levels.

Conclusion

The Global Action Plan is the largest statistical capacity-building initiative ever undertaken to improve agricultural statistics. Because the capacity-building effort supports the integration of agriculture into national statistical systems, it will profoundly affect other sectors as well.

The action plan's framework for capacity building will work best if the development partners who also provide technical support to countries for data collection and other capacity development to coordinate their efforts with this initiative. This initiative also needs to become a part of the household survey network as it relates to rural households.

Great effort is being put into the design and formulation of the action plan in order to generate a long-term impact on national statistical systems in the most cost-effective way, thereby ensuring value for money. Attention is being given to output—the minimum set of core data—in order to focus plans and prioritize actions. However, even greater attention is being given to processes and institutional capacity building to ensure that countries appropriate the technical tools and methods and integrate agriculture into their national statistical systems.

This long-term programmatic approach should produce stronger, more sustainable, and more coherent agricultural statistical systems worldwide that will be able to adapt to ongoing and new data needs with a lessening need for assistance in developing countries.

Appendix A

Minimum Set of Core Data

Group of variables	Key variables	Core data items	Frequency
<i>Economic</i>			
- Output	Production	Core crops (e.g wheat, rice, etc.) Core livestock (e.g. cattle, sheep, pigs, etc.) Core forestry products Core fishery and aquaculture products	Annual
	Area harvested and planted	Core crops (e.g wheat, rice, etc.)	Annual
	Yield / Productivity	Core crops, core livestock, core forestry, core fishery	Annual
- Trade	Exports in quantity and value	Core crops, core livestock, core forestry, core fishery	Annual
	imports in quantity and value	Core crops, core livestock, core forestry, core fishery	Annual
- Stock of Resources	Land cover and use	Land area ⁵
	Economically active population	Number of people in working age by sex	
	Livestock	Number of live animals	
	Machinery	e.g. Number of Tractors, harvesters, seeders etc.	
- Inputs	Water	Quantity of water withdrawn for agricultural irrigation	
	Fertilizers in quantity and value	Core Fertilizers by core crops	
	Pesticides in quantity and value	Core Pesticides (e.g. fungicides herbicides, insecticides, disinfectants) by core crops	
	Seeds in quantity and value	by core crops	
	Feed in quantity and value	by core crops	
Agro processing	Volume of core crops/livestock/fishery used in processing food	By industry	
	Value of output of processed food	By industry	
	Other uses (e.g. biofuels)		
Prices	Producer prices	Core crops, core livestock, core forestry, core fishery	
	Consumer prices	Core crops, core livestock, core forestry, core fishery	

⁵ The frequency for the following items will be established by the framework provided in the Global Strategy to determine the national priorities for content, scope, and frequency. The frequency requirement will also be considered in the establishment of the integrated survey framework where the data sources will be defined.

Group of variables	Key variables	Core data items	Frequency
Final expenditure	Government expenditure on agriculture and rural development	Public investments, Subsidies, etc.	
	Private Investments	Investment in machinery, in research and development, in infrastructure	
	Household consumption	Consumption of core crops/livestock/etc. in quantity and value	
Rural Infrastructure (Capital stock)	Irrigation/roads/railways/communications	Area equipped for Irrigation / Roads in Km / Railways in Km / communications	
International transfer	ODA ⁶ for agriculture and rural development		
Social			
Demographics of urban and rural population	Sex		
	Age in completed years	By sex	
	Country of birth	By sex	
	Highest level of education completed	1 digit ISCED by sex	
	Labor status	Employed, unemployed, inactive by sex	
	Status in employment	Self Employment and employee by sex	
	Economic sector in employment	International Standard Industrial Classification by sex	
	Occupation in employment	International Standard Classification of Occupations by sex	
	Total income of the household		
	Household composition	By sex	
	Number of family/hired workers on the holding	By sex	
	Housing conditions	Type of building, building character, main material, etc.	
Environmental			
Land	Soil degradation	Variables will be based on above core items on land cover and use, water use, and other inputs to production.	
Water	Pollution due to agriculture		
Air	Emissions due to agriculture		
Geographic location			
GIS coordinates	location of the statistical unit	Parcel, Province, Region, Country	
Degree of urbanization	Urban/Rural area		

Source: Global Strategy to Improve Agricultural and Rural Statistics

⁶ Official Development Assistance

Appendix B

Stakeholder Analysis for Agricultural Statistical Systems

Stakeholders	Interests	Likely impact on stakeholder interests with the development of agricultural statistical systems
Planning authorities (Ministries of Planning, Planning Departments in sectoral Ministries – agriculture, health, education, labour, environment, water, etc.)	Accurate, timely and relevant statistics: <ul style="list-style-type: none"> • Make good evidence-based policies and decisions • Justify and illustrate the results of former policies and decisions, so highlight successes • Monitor implementation of poverty reduction strategies (PRSs) and other development programs • track progress in key policy and development areas • To build an accurate understanding of what is happening at local, regional and national levels 	A strengthened agricultural statistical system will lead to: <ul style="list-style-type: none"> • better diagnosis of development issues • more informed policies, plans, and programs • better identification of vulnerable groups especially the poor, disabled, women and children and better targeting of interventions • better monitoring and tracking of progress in achievement of stated objectives, goals, and targets.
Local Governments	To influence Ministries and central government to accelerate transfer of resources to local governments, Planning, implementing, and monitoring development at lower levels of government in countries.	Improved planning, implementing and monitoring development at lower levels of government in countries.
Research and training institutions including Universities	They are providers, analyzers and users of data that provide input to public policy They are also likely to be involved in educating statisticians.	A strengthened statistical system will lead to: <ul style="list-style-type: none"> • improved prospects in participating in various data collections at NSOs, line ministries, etc. • availability of better data for analysis of developmental issues • better meet demand for cross-cutting analyses • improved access to data and especially micro data when databases in line ministries are up and running • increased opportunities to train statisticians and data analysts • increase revenue from training and publication activity

<p>Private Sector Organizations</p>	<p>Want to receive accurate information to:</p> <ul style="list-style-type: none"> • assess product demand (population and income data are crucial) • Assess product supplies for early warning and marketing purposes • assess investment opportunities, risks and prospects and be able to inform external interested parties about investment in a country • Forecasts of economic factors—prices-supplies <p>May be prepared to pay for statistical products to the extent that they are relevant and up-to-date.</p> <p>Have no time to look everywhere for statistics. Keen on collecting statistics from one source to be accessed with minimum bureaucracy.</p>	<p>A strengthened statistical system should lead to:</p> <ul style="list-style-type: none"> • better availability of official statistics • quicker access to official statistics especially when the NSO sets up a national databank, line Ministries develop accessible databases and more statistics are disseminated using the Internet.
<p>Bilateral and Multi Partners (World Bank, IMF, UN Agencies [UNDP, UNICEF, FAO, UNFPA, UNESCO, WFP, UNAIDS, ILO, etc.])</p> <p>Regional institutions/ organizations</p>	<p>Will want accurate statistics to give them a picture of what's going on in a country and to assist them to assess requirements for assistance and/or participation in development initiatives (how they should allocate their resources)</p> <p>Will also want statistics to monitor performance of the programs they support</p> <p>They want statistics to report on their activities in the country and for international and regional reporting e.g. on progress towards the MDGs.</p> <p>Are very interested in building statistical capacity and effectiveness, very much in line with international and regional target setting approach and the MDG's</p> <p>Will want NSS to be cost-effective and if possible, developed in such a way so that it is internationally and regional comparable.</p>	<p>A streamlined and better coordinated statistical system will send the right signal to donors to provide assistance to the country in a coordinated manner</p> <p>The NSDS will provide a mechanism for coordinating donor response to challenges of statistical development in the country.</p> <p>A strengthened statistical system will provide better statistics to donors to better assess requirements for assistance and to provide assistance in a coordinated and synergic manner.</p>
<p>Non Government Organizations NGOs</p>	<p>May see the statistical system as a way of integrating statistical production they have commissioned into the mainstream of government figures and evidence.</p> <p>Will also be interested in stakeholder meetings and in the possibilities of influencing government and other agencies</p>	<p>More systemic approach will assist in finding correlations between different areas and also give them better access to government and other agencies.</p> <p>Will have limited time and resources so may need to be led into the process.</p>

Appendix C

Relationship between the thematic domains, the research topics and the pillars of the Global Strategy

Thematic domain	Research topic	Pillars of the Global Strategy ⁷
Creating an appropriate reference framework	Research for: <ul style="list-style-type: none"> • Creating an appropriate framework for development of an integrated agricultural statistics programme • Mainstreaming agriculture into NSDS • Implementing an Integrated Survey Framework 	II
Identifying the most appropriate master frame for integrated survey	Research for improving the use of GPS, GIS and remote sensing for setting up a master sampling frame for integrated survey	II
	Research for identifying the most appropriate area frame for specific landscape types	
	Research for improving methods for linking area frames with list frames	
Improving data collection methods	Improving methods for estimating crop area, yield and production	I
	Improving methods for estimating crop area, yield and production of: <ul style="list-style-type: none"> • mixed crops • repeated cropping • continuous cropping 	
	Developing methods for estimating yield of root crops	
	Improving methods for estimating post harvest loss and use of pesticides	
	Improving methods for estimating the cost of production in developing countries	
	Improving the methodology for: <ul style="list-style-type: none"> • enumerating nomadic livestock • estimating livestock products 	
	Research for adopting new technologies	
	Improving data collection methods and analysis of Inland fishery and aquaculture	
Improving data collection methods and analysis of irrigated area and use of water for irrigation		
Improving the methodology for food security statistics	Improving the methodology for the estimation of: <ul style="list-style-type: none"> • food security statistics in synergy with FAO/WFP ISFNS strategy work on standards and methods • food stocks • edible forest products Use of Nutrition indicators for food security indicators	I, II

⁷ - Pillar I: establishment of a minimum set of core data that countries will provide to meet the current and emerging demands

- Pillar II: integration of agriculture into the national statistical system

- Pillar III: Fostering the sustainability of the agricultural statistical systems through governance and statistical capacity building

	Use of households surveys / LSMS for collecting data to compile food security indicators	
Improving the methodology for market statistics	Improving the methodology in synergy with AMIS for: <ul style="list-style-type: none"> estimating farm gate prices collecting data on agriculture rural and border market prices estimating informal cross border trade data collecting data on factors and product markets affecting agricultural activities and impact of bio-fuel on the market 	I
Improving the methodology for data analysis	Improving the methodology for: <ul style="list-style-type: none"> reconciliation of census data with survey data determination of user's information needs for decision making use of small area estimation methods for improving agricultural statistics crop forecasting and early warning 	II
Improving the methodology for using administrative data	Improving the quality of administrative data	II
	Developing more efficient and robust methods to use administrative data for improving agricultural statistics	
Identifying appropriate indicators and collection methods for gender related data and indicators	Identifying: <ul style="list-style-type: none"> appropriate indicators data to be collected and survey designs 	I, II
Identifying appropriate indicators and collection methods for small scale fisheries	Identifying the frame and developing methods for appropriate data collection	I
	Improving methods for estimation of self-consumption	
Better integrating geographic information and statistics	Developing robust and statistically based methods for spatial disaggregation and for integrating various kinds of geographical information and geo-referenced survey data	I
	Improving statistical methods for spatial interpolation and presentation	
Improving the methodology for using remote sensing	Developing More efficient and accurate methods for using remote sensing	I
	Evaluating cost efficiency of remote sensing in developing countries.	
	Improving methods for using AFRICOVER or more detailed land use/cover data-bases	
Identifying appropriate indicators and collection methods for agri-environment	Identifying the indicators to be adopted and consequently the guidelines on: <ul style="list-style-type: none"> data to be collected, most appropriate sample units and sample design, interactions among the variables to be investigated, the precisions to be reached 	I, II
	Identifying data to be collected and survey designs for analysing interactions between climate, environment and agriculture	
	Identifying data to be collected and survey designs for analysing the impact of bio-fuel and of GMO on biodiversity and the environment	
	Identifying data to be collected and survey designs for monitoring deforestation and land cover change	

Appendix D

Topics Requiring Limited Resources to Produce Highly Needed Technical Guidelines for Immediate Implementation (Quick Wins)

Thematic domain	Selected research topic	Status in Aug. 2011	Pillars of the Global Strategy ⁸
Creating an appropriate reference framework	1. Framework for development of an integrated agricultural statistics programme	Existing publication needs to be updated	II
	2. Mainstreaming agriculture into NSDS	Draft available guidelines FAO/PARIS21 available	II
Identifying the most appropriate master frame for integrated survey	3. Use of GPS in the production of agricultural statistics	Draft handbook. Additional work on slopes and other conditions. Other field experiments being conducted by WB LSMS project	II
Improving data collection methods	4. Improvement of estimation of crop area, yield and production	Existing publication needs to be updated with focus on yield and production	I
	5. Cost of production	Work initiated	I
	6. Methodology for enumerating nomadic livestock	Draft guideline available	I
Improving the methodology for food security	7. Methodology for the estimation of supply utilization account and food balance sheets	Work initiated	II
Improving the methodology for market statistics	8. Estimation of farm gate prices	Work initiated	I
Improving the methodology for data analysis	9. Reconciliation of census data with survey data	Some country practices documented. More work needed	II

⁸ - Pillar I: establishment of a minimum set of core data that countries will provide to meet the current and emerging demands

- Pillar II: integration of agriculture into the national statistical system
- Pillar III: Fostering the sustainability of the agricultural statistical systems through governance and statistical capacity building

Appendix E

Outputs of the Research Plan and Corresponding Activities

Outputs	Activities
1. Research plan including the specific research needs of the Regions	1.1. Take into account specific research needs of the Regions
2.1 Report on on-going or already completed research activities on the selected priority topics 2.2 Potential partners identified 2.3 Reports on: <ul style="list-style-type: none"> on-going or already completed research activities on the selected priority topics review of relevant literature (« état des lieux » and « state of the art ») gaps analysis and remaining methodological issues identified 	2.1 Collect information concerning the on-going or already completed research activities on the selected topics
	2.2 Identify possible partner institutions
	2.4 Prepare the contracts for the partners (academic institutions, research centers, individual experts, etc.)
	2.5 Coordinate the activities of the partners
	2.6 Facilitate networking among the partners
	2.7. Identify the relevant literature concerning the priority topics
	2.8. Review of the literature concerning the priority topics
	2.9. Identify and analyze the gaps and remaining methodological issues
	2.10 Prepare a draft report on the on-going or already completed research activities and the gaps on the selected topics and literature review
	2.11 Organize workshops concerning the on-going or already completed research activities on the selected topics and literature review
	3. Empirical studies designed, and field tested by relevant technical partner institutions
3.2. Set up the methodology and the instruments (questionnaires, manuals, etc.)	
3.3. Select the countries and the samples for the experiments	
3.4. Conduct the field tests	
4. Technical reports on findings and recommendations for possible solutions to methodological issues prepared, peer reviewed and validated by experts	4.1. Process and analyze the results
	4.2 Prepare a report on the findings and recommend possible solutions to issues
	4.3. Select the experts for the peer review and expert validation
	4.4. Submit the reports prepared to the experts
	4.5. Peer review and expert validation through a technical workshop
5. Methodological publication, dissemination of results	5.1. Analysis of the results of the peer review and the expert validation
	5.2 Prepare and submit methodological papers to important journal
	5.3. Organize dissemination workshop with countries and other stakeholders
	5.4. Disseminate the findings on the web
6. Guidelines for advanced technical assistance and training prepared on the basis of the results of the research	6.1. Preparation of relevant guidelines and handbooks for advanced technical assistance and training, based on the results of the research

Appendix F

Detailed Governance Framework

Global Governance Framework

Global Steering Committee (GSC). The Global Steering Committee (GSC) will provide strategic guidance and oversight for the execution of the Action Plan to implement the Global Strategy. The GSC is the ultimate decision making body for the use of the Trust Fund in compliance with the conditions stipulated in the agreements between the Administrator (FAO) and individual Resource Partners. The GSC will meet at least annually to determine the funds allocation based on the contributions committed by all Resource Partners. Additional meetings of the GSC may be held, as required, on proposal of the Global Executive Board. Countries or institutions may be invited at its meetings, as required, to present good practices that can be shared globally.

Specifically, the Global Steering Committee will:

- a) Ensure coordination and promote integration between activities of the Global Strategy and other related initiatives of statistical capacity development for synergy, complementarity and greater impact;
- b) Ensure a coordinated approach in the implementation of the regional Action Plans in consultation with the Regional Steering Committees;
- c) Decide on the allocation of funds between activities at the global, regional and national levels and between regions and inform the Trust Fund Administrator accordingly;
- d) Approve the proposal of annual work plans for global activities prepared by the Global Office;
- e) Monitor progress in the implementation of the Action Plan;
- f) Review recommendations of the Global Executive Board and approve the consolidated financial report to be prepared by the Administrator and individual financial reports from each Participating Partner implementing components of the Strategy and receiving funds;
- g) Approve the Global Monitoring & Evaluation Plan and M&E reports;
- h) Review and provide inputs into the terms of reference and reports of the periodic evaluations;
- i) Appoint the members of the Global Executive Board and periodically review its mandate;
- j) Support the mobilization of e resources in support of for the implementation of the Action Plan, including financial resources, in kind technical support, South-South Cooperation, etc.

Composition. The Global Steering Committee is composed of FAO, resource partners, countries representatives of the Regional Steering Committees (two per Region), the Chair of the Statistical Commission, key participating partners leading international organizations involved in agricultural and rural statistic and farmer associations. The GSC may review its

composition to include new members as required. The Chair of the GSC will be elected for a term of 2 years.

Rules of decision. Decisions of the GSC will be taken by consensus. In the event that a consensus cannot be reached, decisions will be taken by a simple majority voting process, where Participating Partners will have no voting rights and all votes will carry equal weight.

Global Executive Board. The Global Executive Board (GEB) is a subgroup of the GSC with delegated authority from the GSC to act on its behalf in the interim period between meetings. Its role is to provide policy direction, guidance and accountability to the day-to-day work of the Global Office and other Participating Partners and to support the decision-making process of the GSC. Key decisions of the GSC, including the allocation of funds to global, regional and national activities and the approval of the annual work plans for global activities, will not be delegated to the GEB. The Global Executive Board will meet at least three times a year, where possible at the margins of suitable international meetings. If needed, additional consultations will be conducted via videoconferencing, telephone and e-mail.

The specific responsibilities of the GEB are to:

- a) Follow-up on the implementation of the decisions taken by the Global Steering Committee;
- b) Review and make recommendations to the GSC on annual work programs and budgets prepared by the Secretariat;
- c) Review and make recommendations to the GSC on annual reports and other important documents as required;
- d) Review and make recommendations to the GSC on the agenda and papers for the annual GSC meetings prepared by the Secretariat;
- e) Review and make recommendations to the GSC on financial reports and review the budget situation on a regular basis;
- f) Review the consolidated progress report by the AA and individual reports from each PP on the implementation and make recommendations to the GSC;
- g) Review the Global Monitoring & Evaluation Plan and reports and make recommendations to the GSC
- h) Review nominations for new GSC members and submit them to the GSC for approval;
- i) Mobilize resources in support of the implementation of the Action Plan, including financial resources, in kind technical support, South-South Cooperation, etc.

Composition. The Members of the Global Executive Board will be Seven in total. They will be appointed by the GSC from the list of existing GSC members, selecting two country representatives, two regional partners representatives, two resource partners representatives and FAO (ex-officio). Members resigning from the Global Executive Board will be replaced as soon as possible through an electronic consultation with the agreement of the GSC's Chair, and the appointment will be ratified at the next GSC meeting. The Chair of the GEB will be elected for a term of 2 years.

Rules of decision. Decisions of the GEB will be taken by consensus.

Global Office (GO). The Global Office, based in FAO Statistics Division and led by the global coordinator, will ensure overall technical coordination of the implementation of the Global Strategy at the global level and with regions. The Global Office will act as Secretariat of the GSC providing recommendations on indicative allocation of funds between activities at the global, regional, and country level and between regions. The FAO Statistics Division is the Participating Partner tasked with the normative and technical coordination work, establishing standards, providing centralized technical and practical guidance on cross-regional issues.

The FAO Statistics Division will recruit staff for the Global Office with proved experience in the coordination of global statistical capacity development programmes and high level technical expertise in agricultural and rural statistics.

More specifically, the activities of the Global Office will include:

- a) Serve as the focal point for seeking funding to support implementation of the strategy, especially the completion of the necessary research, the development of training materials, and the provision of technical assistance to the regions and countries. Serve as the secretariat for the Global Steering Committee servicing its meetings and providing recommendations on the allocation of funds. and preparing the annual progress reports to the UNSC.
- b) Provide the framework under which the assessment of the current agricultural statistical system will be completed. This assessment will include a review of the quantity and quality of data being provided, the statistical capabilities of each country, and its readiness to implement the components of the strategy. The assessment will also include a review of the National Strategies for the Development of Statistics.
- c) Prepare guidelines for development of the sector strategic plans for agriculture to mainstream agriculture into the NSDS.
- d) Based on the findings of the assessment, establish the framework for a training program and technical assistance for the regions and countries to determine the core set of data for the national programs and implement the technical systems required by the Global Strategy.
- e) Provide overall coordination support for countries in regions that do not have a viable regional coordinating body.
- f) Lead, coordinate, guide, and supervise methodological activities carried out by partner institutions, including universities, research institutes etc.
- g) Develop new cost-effective methods.

Inter-Agency and Expert Group on Agricultural and Rural Statistics (IAEG). The Inter-Agency and Expert Group on Agricultural and Rural Statistics will guide methodological developments in statistics for food security, sustainable agriculture, and rural development. Its overall objectives are a) to facilitate the coordination and integration of statistics on food security, sustainable agriculture, and rural development with related international statistical standards from other statistical domains b) to provide guidance to the global governing bodies during implementation of the Action Plan of the Global Strategy to Improve Agricultural and Rural Statistics; c) to advance the implementation of the Global Strategy in countries and regions.

To achieve these objectives, the IAEG will focus on the following:

- a) Provide guidance on tools, standards and methodologies to the Global Office during the implementation of the Global Strategy to Improve Agricultural and Rural Statistics.
- b) Review key initiatives and strategies in the development of food security, sustainable agriculture, and rural development statistics.
- c) Review and provide expert guidance on methodologies and identify technical issues in relation to statistics on food security, sustainable agriculture, and rural development.
- d) Facilitate the coordination and integration of statistics on food security, sustainable agriculture, and rural development with related international statistical standards from other statistical domains.

The IAEG will be comprised of high-level experts in statistics for food security, sustainable agriculture and rural development from national governments and international organizations. The membership will ensure regional representation and a broad range of experience drawn from countries, international agencies, academia, and other subject matter experts. The IAEG may consider establishing task teams on specific topics.

The Secretariat of the IAEG will be held at FAO.

The IAEG will meet at least once a year and present an annual report to the Statistical Commission on the progress made in its activities.

Regional Governance Framework

Regional Steering Committee (RSC). The Regional Steering Committee is the decision-making body at regional level and will provide guidance and oversight for the implementation of the regional and country activities defined in the Regional Plan. The RSC will assess country proposals and prioritize the use of the funds among countries. The composition of the RSC will typically include representatives of countries, resource partners, regional organization, regional participating partners, FAO and selected experts.

- The GSC will ensure coordination and integration of the Action Plan to implement the Global Strategy with other ongoing international programmes of statistical capacity development.
- The GSC will be responsible for mobilisation all kinds of support for implementation of the Strategy, including raising of funds, in-kind contributions and technical support.
- The GSC can invite identified experts or representatives of relevant organizations to the meetings of the GSC to share good experience and provide guidance, as needed.
- The GSC can review its functions at any stage, as required.

Regional Executive Board (REB). Each Regional Steering Committee will evaluate if to establish the Regional Executive Board, which is a sub-group of the RSC from which it receives delegated authority to oversee the execution of the decisions. The REB will meet more frequently than the RSC, and will carry out RSC's functions in the interim between RSC's meetings, providing in particular policy directions to the activities for the implementation of the regional Plan.

Regional Office (RO). The Regional Office structure and size will vary by region, depending on regional resources and needs. It has the major role of coordinating the country assessments and providing training and technical assistance to the integrated national statistical systems. The Regional Offices should also liaise with other international, regional, and subregional offices within their Region to coordinate their support to countries, thereby avoiding duplication of efforts and ensuring that global standards are being followed. In particular, the activities of Regional Offices will include:

- Seek and providing funding to support implementation of the strategy at regional level, especially adapting guidelines and training materials to regional specificities and providing technical assistance to the countries;
- Serve as the secretariat for the Regional Steering Committee servicing its meetings.
- Provide technical support to countries to carry out the assessment of the national statistical systems for agriculture and assisting the countries with documentation of the results
- Ensure that the National Strategies for the Development of Statistics are revised to mainstream agriculture in the NSDS
- Work closely with the Global Office to use the results of the assessment to jointly determine the training and technical assistance requirements for the Region
- Adapt the methodologies developed by the Global Office to meet the requirements of the countries in the Region
- Collaborate with the Global Office to ensure that the specific research needs of the regions are taken into account
- Provide overall coordination of the training activities and technical support to be carried out in the region
- Develop partnering arrangements between countries with well-developed statistical systems to support those needing capacity building.
- Provide information on ongoing research projects in the Region and facilitate contact and exchange of information.
- Provide assistance in carrying out pilot surveys and contribute to validation of developed methodological solutions.

National Governance Framework

The Governance at national level will build as much as possible on existing coordination mechanisms and structures. National governance of the agricultural statistical system entails the establishment, where this does not exist, of a sectoral coordination mechanism that brings together the national statistics office and the ministries responsible for agriculture, forestry, and fisheries and any other institutions that collect agriculture-related data. This sectoral coordination mechanism should be part of the national statistical coordination mechanism, such as the National Statistics Council, which provides governance to the whole national statistical system. Typically, the coordination mechanism for the agricultural sector will be a sub-committee of the National Statistics Council, ensuring that agricultural statistics is integrated into the national statistical system. The National Statistics Council, through the agricultural sub-committee and in coordination with the Global Strategy regional coordinator, will be responsible for carrying out the detailed assessment of the capacity of the country's agricultural statistical system as well as preparing the Sector Strategic Plan for Agricultural

and Rural Statistics, in line with the recommendations of the Global Strategy and in consultation with data users and other stakeholders. These governance arrangements should enable the ministries and agencies involved in the collection of agricultural data to integrate the Sector Strategic Plan into the National Strategies for the Development of Statistics (NSDS). The National Statistics Council will also be responsible for reviewing (as needed) the existing Statistical legislation in order to ensure that clear responsibilities for data collection are assigned to the different national Institutions. The National Statistics Council should develop a strategy to foster public awareness and mobilize resources in support of the implementation of the Sector Strategic Plan for Agricultural and Rural Statistics and of the NSDS.

Appendix G

Global Action Plan Results-Based Logical Framework

Project name:	Improving Statistics for Food Security, Sustainable Agriculture, and Rural Development - Action Plan to Implement the Global Strategy
Purpose of the project:	To improve the effectiveness of policies to reduce poverty, improve food security and promote growth in agricultural production by improving the quality and availability of agricultural and rural statistics in all countries and to ensure that these improvements can be sustained by increasing the capacity of national statistical systems to compile, disseminate and analyze these statistics in the future.

RESULTS-BASED LOGICAL FRAMEWORK

RESULTS CHAIN	PERFORMANCE INDICATORS			MEANS OF VERIFICATION	RISKS/MITIGATION MEASURES
	Indicator (including csi)	Baseline	Target		
IMPACT Considerable increase in the number of countries able to develop sustainable statistical systems, which produce accurate and reliable agricultural and rural data, comparable over time and across countries, widely used by decision makers for more effective policies to reduce poverty, increase food security and promote agricultural growth in all countries.	1. Proportion of countries which are able to produce agreed minimum set of core data, provide analysis, disseminate the results, and increase use of data by decision makers to meet the current and emerging statistical demands of national and international stakeholders	TBD (Country Assessments are used to establish the baseline)	1.Reduction in the number of target countries whose NASS are classified as having low capacity by 50% 2. Reduction in the number of target countries that are not able to disseminate at least 60% of the minimum set of core data by 50%	Progress report	<ul style="list-style-type: none"> • Risks: <ol style="list-style-type: none"> 1. Lack of national political interest in improving agricultural statistics. 2. Global activities may not respond to country priorities. 3. Funds may not be mobilized and/or allocated in a timely manner. 4. Ineffective coordination of activities at country level • Mitigation Measures: <ol style="list-style-type: none"> 1. Continued advocacy starting with the launching of the Strategy. 2. Implementing an effective communication plan.
	2.Proportion of countries able to develop a sustainable agricultural statistics system through the coordination and integration of agriculture into the national statistical systems	TBD (Country Assessments are used to establish the baseline)	At least 50% of target countries to have their NASS integrated into the national statistical system and included in the NSDS	Progress reports	<ul style="list-style-type: none"> • Risks: <ol style="list-style-type: none"> 1.Sector Strategic Plan for Agricultural Statistics (SSPS) not designed in context of the NSDS 2. Coordination structures exist but are not functioning effectively • Mitigation Measures: <ol style="list-style-type: none"> 1.Intense statistical advocacy for government for integrating agricultural statistics into the NSDS 2.Ensuring that there are incentives in place to make coordination structures effective 3.Ensuring that there is adequate administrative back-up for coordination structures 4. Aid for development of a country proposal for each

					<p>participating country.</p> <p>5. Using existing national structures and ensure their effective coordination through their integration into the NSDS.</p>
	<p>3. Proportion of people working on agricultural statistics that have appropriate skills resulting from training and technical assistance.</p>	TBD	<p>1. At least 50% of target countries reduce the gap between technical assistance needs and the availability of staff with appropriate skills by at least 10% at mid-term and 20% at the end of Phase</p> <p>2. At least 50% of target countries reduce the gap between training needs and the availability of trained staff by at least 10% at mid-term and 20% at the end of Phase 1</p> <p>3. Training centres have all required qualified trainers at the end of Phase 1</p>	Progress reports	<p>• Risks:</p> <p>1. Technical assistance and training needs of countries are not well identified</p> <p>2. Suitable qualified experts cannot be found</p> <p>3. Countries unable to make use of the advice</p> <p>4. Trainees are not selected on the basis of needs</p> <p>• Mitigation Measures:</p> <p>1. Use, and in case adapt the country assessment questionnaire developed at global level</p> <p>2. Perform in-depth assessment</p> <p>3. Maintain a global roster of experts at global and regional levels</p> <p>4. Advocacy with senior management of statistical offices</p> <p>5. Provision of guidelines and training for HR managers and intensive supervision to ensure appropriate selection of trainees</p>
	<p>4. Proportion of countries able to use new cost-effective methodologies in data collection, analysis, and presentation (taking into account technological progress) developed by leading research institutes, and technical assistance provided to countries to apply the methodologies</p>	TBD (In-depth Country Assessments are used to establish the baseline)	<p>1. Technical reports and scientific publications developed on all prioritised research topics</p> <p>2. Findings disseminated in countries</p> <p>3. Staff in the countries trained on new cost-effective methodologies and techniques through guidelines and handbooks based on scientific publications and technical reports resulting from research</p>	Progress Reports	<p>• Risks:</p> <p>1. Research is not adequately financed</p> <p>2. Difficulties in developing and disseminating new methods and techniques</p> <p>3. Difficulties in applying new methods and techniques</p> <p>• Mitigation Measures:</p> <p>1. Appropriate resources mobilization</p> <p>2. Involve and properly coordinate the best re-search teams.</p> <p>3. Facilitate dissemination of findings through scientific publications and technical reports</p> <p>4. Translate scientific publications and technical reports into hand-books, guidelines and training material, used for technical assistance and training</p>

References

- African Development Bank, FAO, UNECA, 2011: *Improving Statistics for Food Security, Sustainable Agriculture, and Rural Development: An Action Plan for Africa*.
- Benedetti, Bee, Espa, Piersimoni (Eds.) (2010) *Agricultural Survey Methods*, Wiley, Chichester, UK, ISBN: 978-0-470-74371-3, 434 pages.
- Carfagna E. and Carfagna A. (2010) Alternative sampling frames and administrative data; which is the best data source for agricultural statistics?" in Benedetti, Bee, Espa, Piersimoni (Editors), *Agricultural Survey Methods*, Wiley, New York, April 2010, ISBN: 978-0-470-74371-3, 434 pages. <http://eu.wiley.com/WileyCDA/WileyTitle/productCd-0470743719.html>
- Carfagna E. Gallego F.J., (2005) Using Remote Sensing for Agricultural Statistics, *International Statistical Review*, volume 73, number 3, December 2005, pp. 389-404, ISSN 0306-7734.
- Carfagna E., Marzialetti J. (2009 a) Sequential Design in Quality Control and Validation of Land Cover Data Bases, *Journal of Applied Stochastic Models in Business and Industry*, 25, 2, 195-205.
- Carfagna E. and Marzialetti J. (2009 b) Continuous innovation of the quality control of remote sensing data for territory management, in *Statistics for Innovation*, Erto P. (ed), Springer Verlag, ch 8, pp. 172-188.
- Casley, D. J., and D. A. Lury. 1981. "Data Collection in Developing Countries." Oxford University Press, 244 p. ISBN 0198771231
- de Graaf, G. J., R. Grainger, L. Westlund, R. Willmann, D. Mills, K. Kelleher, and K. Koranteng. 2011. "The Status of Routine Fishery Data Collection in Southeast Asia, Central America, the South Pacific, and West Africa, with Special Reference to Small-Scale Fisheries." *ICES Journal of Marine Science*.
- Doraiswamy, P. C., T. R. Sinclair, S. Hollinger, B. Akhmedov, A. Stern, and J. Prueger. 2005. "Application of MODIS Derived Parameters for Regional Crop Yield Assessment." *Remote Sensing of Environment* 97 (2): 192–202.
- Dorigo, W. A., R. Zurita-Milla, A. J. W. de Wit, J. Brazile, R. Singh, and M. E. Schaepman. 2007. A Review on Reflective Remote Sensing and Data Assimilation Techniques for Enhanced Agroecosystem Modeling." *International Journal of Applied Earth Observation and Geoinformation* 9 (2): 165–193.
- ESSnet ISAD. 2008. "Report of WP1. State of the Art on Statistical Methodologies for Integration of Surveys and Administrative Data." <http://www.essnet-portal.eu/finished-projects/isad-finished>.
- FAO (Food and Agriculture Organization). 1982. "Estimation of Crop Areas and Yields in Agricultural Statistics", FAO, Rome.
- _____. 1986. Food and Agricultural Statistics in the context of a national information system, FAO, Rome.
- _____. 1988. "Report of the Eleventh International Training Course on Applications of Remote Sensing to Agricultural Statistics." FAO, Rome.
- _____. 1992. "Collecting Data on Livestock." FAO, Rome.
- _____. 1996. *Multiple Frame Agricultural Surveys*. Vol. 1, *Current Surveys Based on Area and List Sampling Methods*. FAO Statistical Development Series, No. 7. Rome: FAO.
- _____. 1997. *Guidelines on the Collection of Structural Aquaculture Statistics. Supplement to the Programme for the World Census of Agriculture 2000*. FAO Statistical Development Series, No. 5b. Rome: FAO.

- _____. 1998. *Multiple Frame Agricultural Surveys*. Vol. 2, *Agricultural Survey Programmes Based on Area Frame or Dual Frame Sample Designs*. FAO Statistical Development Series, No. 10. Rome: FAO.
- _____. 1999. "Guidelines for the Routine Collection of Capture Fishery Data." FAO Fisheries Technical Paper No. 382. Rome, FAO.
- _____. 2000. *World Census of Agriculture*. Rome: FAO.
- _____. 2008a. *Independent External Evaluation of the FAO's Role and Work in Statistics*. Rome: FAO.
- _____. 2008b. *The State of Food and Agricultural Statistics Systems in Africa: 2007*. Rome: FAO.
- _____. 2010a. *Enhancing FAO's Practices for Supporting Capacity Development of Member Countries*. Rome: FAO.
- _____. 2010b. *World Programme for the Census of Agriculture 2010*.
<http://www.fao.org/economic/the-statistics-division-ess/world-census-of-agriculture/world-programme-for-the-census-of-agriculture-2010/ar/>.
- Gallego, F. J. 2004. "Remote Sensing and Land Cover Area Estimation." *International Journal of Remote Sensing* 25 (15): 3019–3047.
- Gallego, F. J., and E. Carfagna. 2005. "Using Remote Sensing for Agricultural Statistics." *International Statistical Review* 73 (December).
- Gallego F. J., E. Carfagna, and B. Baruth. 2010. "Accuracy, Objectivity and Efficiency of Remote Sensing for Agricultural Statistics." In *Agricultural Survey Methods*, 193–211, ed. Bee Benedetti, and Piersimoni Espa. Chichester, UK: John Wiley.
- GEOSS (Global Earth Observation System of Systems). 2009. *Best Practices for Crop Area Estimation with Remote Sensing*.
http://www.earthobservations.org/documents/cop/ag_gams/GEOSS%20best%20practices%20area%20estimation%20final.pdf.
- Group of 20. 2011. "Ministerial Declaration, Action Plan on Food Price Volatility and Agriculture." Meeting of G20 Agriculture Ministers, Paris, June 22–23.
- Hannerz, F., and A. Lotsch. 2008. "Assessment of Remotely Sensed and Statistical Inventories of African Agricultural Fields." *International Journal of Remote Sensing* 29 (13): 3787–3804.
- Fellegi I. and Ryten J., 2007, Developing Country Statistical Capacity, paper presented at 56th Session of International Statistical Institute, Lisbon, August 22-29, 2007
- Keita N., Carfagna E. 2010. Overview of methodological issues for research to improve agricultural statistics in developing countries Proceeding of ICAS-V, Fifth International Conference on Agricultural Statistics, Integrating Agriculture into National Statistical Systems Kampala, Uganda 13-15 October 2010, pp. 1-26. Conference organized by FAO, ISI, UNSD, World Bank, Eurostat, AFDB, USDA. <http://isi-web.org/news/icas-v>
- Keita N., Carfagna E. 2009. "Use of modern geo-positioning devices in agricultural censuses and surveys", Bulletin of the International Statistical Institute, the 57th Session, 2009, Proceedings, Special Topics Contributed Paper Meetings (STCPM22) organised by Nam Naman Keita (FAO) "Using advanced data collection methods and modern tools to improve agricultural statistics data quality", Durban, August 16-22, 2009
- Keita N., E. Carfagna, and G. Mu'Ammar. 2010. "Issues and Guidelines for the Emerging Use of GPS and PDAs in Agricultural Statistics in Developing Countries." Fifth International Conference on Agricultural Statistics (ICAS-V), Kampala, Uganda, October 12–15.
- Kish, L. 1989. *Sampling Methods for Agricultural Surveys*. FAO Statistical Development Series, No. 3. Rome: FAO

- Lavallée, P. 2005. "Quality Indicators When Combining Survey Data and Administrative Data." *Proceedings of Statistics Canada Symposium 2005, Methodological Challenges for Future Information Needs*. <http://www.statcan.gc.ca/pub/11-522-x/11-522-x2005001-eng.htm>.
- Mahalanobis, P. C. 1946. Recent Experiments in Statistical Sampling in the Indian Statistical Institute, *Journal of the Royal Statistical Society*, 109, 325-370
- Narain R. D. 1955. *Methods of Collecting Current Agricultural Statistics*, FAO, Rome.
- OECD (Organisation for Economic Co-operation and Development). 2005. "Paris Declaration on Aid Effectiveness." Development Co-operation Directorate (DCD-DAC). http://www.oecd.org/document/18/0,3746,en_2649_3236398_35401554_1_1_1_1,00.html.
- _____. 2008. "Accra Agenda for Action." Development Co-operation Directorate (DCD-DAC) http://www.oecd.org/document/18/0,3746,en_2649_3236398_35401554_1_1_1_1,00.html.
- Panse, V. G. 1964. "Estimation of Crop Yields" FAO, Rome, 56 pp.
- PARIS21 (The Partnership in Statistics for Development in the 21st Century.) 2010. "Partner Report on Support to Statistics 2010 Round." PARIS21, Paris.
- Selander, R., J. Svensson, A. Wallgren, and B. Wallgren. 1998. "How Should We Use ICAS Data?" Statistics Sweden, Stockholm.
- Selenius, J. 2010. "Identifying the Core Data Needed for Agri-Environmental Statistics: Eurostat." *DireDate, Proceedings of ICAS-V, Kampala, Uganda, October 13–15*.
- Sukhatme, P. V. and Sukhatme B.V. 1970. *Sampling Theory of Surveys with Applications*. Asia Publishing House, London.
- United Nations. 2007. "Wye Group on Statistics on Rural Development and Agricultural Household Income." <http://unstats.un.org/unsd/methods/citygroup/wye>.
- Wallgren A., and B. Wallgren. 1999. "How Can We Use Multiple Administrative Sources?" Statistics Sweden, Stockholm.
- _____. 2007. *Register-Based Statistics: Administrative Data for Statistical Purposes*. Chichester, UK: John Wiley.
- _____. 2009. *Using Administrative Registers for Agricultural Statistics*. In *Agricultural Survey Methods*, ed. Bee Benedetti and Piersimoni Espa. Chichester, UK: John Wiley.
- World Bank. 2008. *World Development Report, Agriculture for Development*. Washington, DC: World Bank.
- World Bank, Food and Agriculture Organization, and United Nations Statistical Commission. 2011. *Global Strategy to Improve Agricultural and Rural Statistics*. Report no. 56719-GLB. Washington, DC: World Bank.
- Zarkovich, S. S. 1963. *Quality of Statistical Data*. FAO, Rome