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Independent Evaluation of FAO's Role and Work in Statistics

Table of Contents

	Pages
Executive Summary	
I. Introduction	13
A. BACKGROUND TO THE EVALUATION	13
B. OBJECTIVES OF THE EVALUATION	13
C. EVALUATION APPROACH AND METHODOLOGY	14
D. THE FAO STATISTICAL SYSTEM	16
E. AN IDEAL FAO 21ST CENTURY STATISTICAL SYSTEM	20
II. Relevance of FAO's Work in Statistics	25
A. RELEVANCE OF FAO'S WORK: STAKEHOLDER PERSPECTIVES	25
<i>Perspectives of Users of FAO Statistical Data</i>	25
<i>Perspectives of Clients of FAO Technical Services</i>	27

B. EMERGING DATA NEEDS AND ISSUES FOR THE 21ST CENTURY	28
<i>Stakeholder Perspectives on Emerging Data Needs and Issues</i>	28
<i>Emerging Technologies and Data Systems for the 21st Century</i>	31
<i>The Need for Flexibility to Meet the Future Statistical Needs</i>	31
III. Quality and Utility of the FAO Statistical System	32
A. ASSESSMENT OF FAO STATISTICAL PRODUCTS AND TECHNICAL SERVICES	32
<i>FAO Data Quality Framework</i>	33
B. QUALITY OF COUNTRY STATISTICAL CAPACITY (Q1)	34
<i>Quality and Utility of FAO's Technical Services</i>	35
<i>Qualitative Assessment of Field Activities</i>	36
<i>Appropriateness of the TCP Mechanism for Funding Capacity Building</i>	38
<i>FAO's Comparative Advantage Remains</i>	40
<i>Country Agricultural Statistics Capacity: Building Back Better</i>	41
C. QUALITY OF DATA COMING FROM THE NATIONAL SOURCE (Q2)	42
<i>CountrySTAT and the Reinforcement of Quality of Data from the National Source</i>	43
D. QUALITY OF DATA AS IT REACHES THE USER (Q3)	44
E. GENDER RESPONSIVE STATISTICS	47
IV. Information Technology, Information Management and Integrated Dissemination	48
A. USER EXPECTATIONS OF FAO DATA SYSTEMS: ACCESS, FUNCTIONALITY, AND DISSEMINATION	48
<i>To pay or not to pay</i>	48
B. DATA INTEGRATION AND DISSEMINATION ACROSS FAO DEPARTMENTAL AND DIVISIONAL BOUNDARIES	49
C. THE STRATEGY, DESIGN AND EXECUTION OF THE FAOSTAT-2 INFORMATION TECHNOLOGY	51
D. AN APPROPRIATE IT BASIS FOR MOVING FORWARD	52
V. Collaboration, Partnership and Advocacy	53
A. VISIBILITY OF FAO IN THE INTERNATIONAL STATISTICAL SYSTEM	53
B. BUILDING LONGER TERM PARTNERSHIP WITH DONOR ORGANIZATIONS	54
C. COOPERATION AND PARTNERSHIP IN GEO-SPATIAL STATISTICS	55
VI. Management, Governance and Organizational Structure	56

A. LONG-TERM STRATEGY AND PRIORITY SETTING FOR THE STATISTICS PROGRAMME	56
B. INTERNATIONAL ADVISORY GROUP ON FAO STATISTICS AND OTHER FORA FOR INTERACTION ON STATISTICS PROGRAMME	57
C. COORDINATION AND LEADERSHIP OF THE FAO STATISTICAL SYSTEM	58
D. ORGANIZATIONAL AND GOVERNANCE STRUCTURE OF THE FAO STATISTICAL SYSTEM	61
E. ORGANIZATION OF FAO'S STATISTICS DIVISION WORK	63
F. ROLE OF THE REGIONAL STATISTICIANS	64
G. ROLE OF FAO COUNTRY REPRESENTATIVES	65
H. NEED FOR STAFF TRAINING, SKILL ENHANCEMENT AND SUCCESSION PLANNING	66
VII. Ensuring Adequate Resources for the FAO Statistics Programme	67
A. NEED FOR A STATISTICAL INFRASTRUCTURE FACILITY	67
B. RE-PRIORITIZATION OF DATA COLLECTION ACTIVITIES AND RESOURCE SAVINGS	68
C. PRIORITIES FOR RE-DIRECTING REGULAR PROGRAMME RESOURCES TO STATISTICS	69
<i>Scenario I: Status Quo</i>	70
<i>Scenario II: Recovering Lost Ground</i>	71
<i>Scenario III: Partially Recovering Lost Ground</i>	72

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Composition of the Evaluation Team and Expert PanelEvaluation Core Team

John Dunmore (Team Leader)
Jan Karlsson (Senior Statistician)

Regional Experts

Isidoro David (Asia)
Moubarack Lo (Africa)
Pedro Sainz (Latin America and the Caribbean)

Thematic Studies

Jim Garber (Information Technologies)
Devika Madalli (Information Management and Dissemination)
James Muir (Fisheries Statistics)
Antti Rytkonen (Forestry Statistics)

FAO Evaluation Service

Daniel Shallon (Evaluation Manager)
Carlos Tarazona (Evaluation Officer)
Anna Guerraggio (Research Analyst)

Expert Panel

Cheryl Christensen
Eugenio Cap
Pieter Everaers
Andrew Flatt
Romeo Recide
Pedro Sainz
Awa Thiongane

Acronyms

ABCDQ	Agricultural Bulletin Board on Data Collection, Dissemination and Quality of Statistics
ADG	Assistant Director-General
AGA	Livestock Division
AGAL	Livestock Information, Sector Analysis and Policy Branch
AGRHYMET	Centre Régional de Formation et d'Application en Agrométéorologie et Hydrologie Opérationnelle
AGN	Nutrition Division
APO	Associate Professional Officers Programme
COFI	FAO Committee on Fisheries
COFO	FAO Committee on Forestry
COMTRADE	UN Commodity Trade Statistics Database
CWP	Coordinating Working Party (on Fishery Statistics)
DG	Director-General
ECLAC	UN Economic Commission for Latin America and the Caribbean
EFTA	European Free Trade Association
ERS	(USDA) Economic Research Service
ESCAP	UN Economic and Social Commission for Asia and the Pacific
ESS	Statistics Division
ESSB	Basic Data Unit (former)
ESSD	ESS Office of Director
ESSG	Global Statistics Service
ESSS	Country Statistics Service
EST	Trade and Markets Division
ESW	Gender, Equity and Rural Employment Division
EU	European Union
EUROSTAT	Statistical Office of the European Communities
FAO	Food and Agriculture Organization of the United Nations
FAOR	FAO Representative
FAOSTAT	Corporate Database for Substantive Statistical Data (FAO)
FBS	Food Balance Sheet
FI	FAO Fisheries and Aquaculture Department
FIDI	Fishery Information, Data and Statistics Unit (former)
FIES	Fisheries and Aquaculture Information and Statistics Service
FIGIS	Fisheries Global Information System
FISHSTAT	Fisheries Statistical working system
FIVIMS	Food Insecurity and Vulnerability Information and Mapping Systems
FO	FAO Forestry Department
FOED	FOE Office of Director
FOIM	Forest Assessment and Reporting Service
FOMR	Forest Resources Development Service
FONS	Forestry Planning and Statistics Branch (former)
FORIS	Forest Resources Information System
FRA	Forest Resource Assessment
GCP	Government Cooperative Programme
GIEWS	Global Information and Early Warning System
GIS	Geographic Information Systems
GLIPHA	Global Livestock Production and Health Atlas
GS	General Service
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome
HQ	Headquarters
IAGAS	International Advisory Group on Agriculture Statistics

IAGFS	International Advisory Group on FAO Statistics
ICAS	International Conference on Agriculture Statistics
ICT	Information Communication Technologies
IDWG	Inter-Departmental Working Group
IEE	Independent External Evaluation of FAO (2007)
IFPRI	International Food Policy Research Institute
IICA	Inter-American Institute for Cooperation on Agriculture
ILO	International Labour Organization
IMF	International Monetary Fund
ISI	International Statistical Institute
IT	Information Technology
ITTO	International Tropical Timber Organization
IWG.AGRI	Inter-secretariat Working Group on Agriculture Statistics
JRC	Joint Research Centre
LIFDC	Low-Income Food-Deficit Country
LTU	Lead Technical Unit
MDG	Millennium Development Goal
MoU	Memorandum of Understanding
NACA	Network of Aquaculture Centres in Asia and the Pacific
NASS	USDA National Agricultural Statistics Service
NFP	National Forest Programme
NGO	Non-Governmental Organization
NRCE	Environmental Assessment and Management Unit (FAO)
NRL	Land and Water Division (FAO)
NRLA	Land Tenure and Management Unit (FAO)
NRLW	Water Development and Management Unit (FAO)
NSO	National Statistical Office
ODA	Official Development Assistance
OECD	Organization for Economic Co-operation and Development
PARIS21	Partnership in Statistics for Development in the 21 st Century
PE	Programme Entity (FAO)
RP	Regular Programme (FAO)
SDMX	Statistical Data and Metadata Exchange
SEAFDEC	Southeast Asia Fisheries Development Centre
SOFA	The State of Food and Agriculture
SOFI	The State of Food Insecurity
SOFIA	The State of World Fisheries and Aquaculture
SOFO	The State of the World's Forests
SQL	Structured Query Language
SUA	Supply/Utilisation Accounts
TA	Technical Assistance
TCDC	Technical Cooperation between Developing Countries
TCP	Technical Cooperation Programme
TERRASTAT	Soil and Terrain Database
ToR	Terms of Reference
UN	United Nations
UNDP	United Nations Development Programme
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
UNGA	United Nations General Assembly
UNICEF	United Nations Children's Fund
UNSC	United Nations Security Council
UNSD	United Nations Statistics Division

USDA	United States Department of Agriculture
WAICENT	World Agricultural Information Centre
WB	World Bank
WHO	World Health Organization
WP	Working Programme
WSSD	World Summit on Sustainable Development
WTO	World Trade Organization

Executive Summary

- i. FAO's work on the collection and dissemination of statistical information on food and agriculture represents a core element of the Organization's mandate. From its inception, the FAO has endeavoured to maintain the best possible capacity to process, validate, harmonize and analyze incoming data and generate accurate and timely information. Improving the quality, transparency and coverage of, as well as access to, FAO's statistical data has been an important priority. A second, and no less critical priority, has been to enhance the capacity of national governments to develop and use their statistical systems.
- ii. Today, several institutions provide agricultural, forestry and fisheries data, including universities, the industry, private organizations and national governments. None, however, provide global statistics in such a wide range of areas as FAO. Heavy use is indeed made of FAO databases internally within FAO itself to produce analysis, "state of" publications, and projections. FAO's global statistics are quoted continuously and used externally in global analysis by academics, research institutions, governments and the private sector.
- iii. The Independent External Evaluation¹ (IEE) of FAO called for "*considerably greater priority to the provision of basic data and statistics*" and a "*fundamental rethink*" of statistical activities which would heavily involve users and "*would consider how data output can be rationalized and [identify] requirements for new data or aggregations of data*". This evaluation, mandated by the FAO Programme Committee in September 2007, has thus strived, as per its Terms of Reference², "*to assess work in this area from the point of view of clients and users of FAO statistical products and services*".
- iv. The research, field work and analysis for the evaluation was based on three components: i) a series of structured interviews with stakeholders including major users, collaborating institutions, and a sample of National Statistical Offices (NSOs); ii) surveys of users of FAO data and an instrument sent to NSOs in Member Countries; and iii) a series of thematic studies on FAOSTAT, Fisheries Statistics, Forestry Statistics, Statistical Information Management and Dissemination, and Information Technology for Statistics.
- v. The evaluation also benefited from the advice of an Expert Panel throughout the process. Key suggestions were received from the Panel to define the critical evaluation issues as well as to elicit "*An Ideal FAO 21st Century Statistical System*" that served as the analytical framework against which FAO's work in statistics was assessed. In addition, the evaluation of the quality and utility of FAO's statistical products and services focused on the data quality points identified in the FAO Data Quality Framework.
- vi. The FAO Statistics Programme has stakeholders worldwide both as providers and users of its statistical data, and as clients of its technical services. The statistics user community vests a certain amount of confidence in the FAO Statistics Programme as a global unbiased body of reliable and relevant statistics. The Evaluation Team confirmed that, generally, users value FAO data, for use in the conduct of their work and for decision making. Likewise, results from the NSOs survey indicate that FAO is generally responsive to the statistical needs of Members, and that FAO's assistance has led to a strengthening of permanent statistical capacity. The favourable perceptions of FAO's user community and Member Countries' statistical offices belie a rapidly deteriorating operational environment for the FAO Statistics Programme.

¹ Independent External Evaluation of FAO, page 105

² The full Terms of Reference of the Evaluation can be found in Annex 1.

Operational Environment for FAO Statistics

vii. While no exact numbers exist to compare the quality of statistical collection in the 1970s and 1980s with that of today, there is anecdotal evidence that national statistical capacity, particularly for agricultural statistics, has deteriorated, as a result of a lack of donor interest in capacity building, and a consequent decline in priority and resources at the national level. Many countries in Africa, for example, do not have capacity to collect even the most basic production statistics, although that capacity existed in the 1970s. The Evaluation Team found that the quantity and quality of data coming from national official sources has been on a steady decline since the early 1980s, particularly in Africa. Official data submissions from countries in Africa are at their lowest level since before 1961, with only one in four African countries reporting basic crop production data.

viii. The underlying trend in countries' inability to report basic statistics must be directly tied to a lack of institutional capacity to do so. This has inevitable major consequences for the quality of data found in the FAO global statistical system. The Evaluation Team concluded that the current situation is a reflection of a few inter-related circumstances:

- the lack of country capacity to collect basic data on agriculture following a period of deterioration in overall national statistical capacity;
- the low priority given by FAO to work with countries in improving the quantity and quality of their data submissions; and
- a limited field presence (both at country and regional level) and poor networking with member countries and partners, making it difficult to keep FAO and the countries themselves abreast of recent developments.

ix. The end result is that FAO, in order to achieve the global coverage that users have come to expect, must estimate production data for an increasing number of countries (over 70% of the African countries). Favourable user perceptions of the high value of FAO statistics aside, the large number of FAO "estimates" has obvious implications for the quality of data in the FAO Statistical System.

x. The Evaluation Team concluded that the FAO Statistics Programme is rife with quality issues: from the quality of the collection methods, to the quality of the data as it comes to FAO from the national source, to the quality of the FAO data as it reaches the user. The Evaluation also concluded that critical human and financial resource and capacity limitations affect the ability of FAO to develop new methods and techniques for use in national statistical systems, as well as, provide direct institutional support to Member Countries. This situation has now reached a point where key activities are on the verge of collapse without a significant re-direction of resources.

xi. Just as donors and national governments were reducing the priority and resources for the collection of basic statistics, including agricultural statistics, over the 1980s and into the 1990s, FAO was following a similar priority and resource-reducing path. Not only were overall appropriations for Statistics declining with the Organization's declining budget, but Statistics continued to receive a smaller and smaller share of appropriations for technical work. As a percentage of FAO's net appropriations over the biennia 1994-95 to 2006-07, Statistics moved from a 6.7 percent share of the appropriations to close to 4.5 percent. The increasing need for statistical capacity building among member nations and the continuous decline of Statistics' share of FAO funding, provided the basis for the recommendation of the IEE that the Organization needed to give much greater priority to its global role of provider of basic data and statistics in food and agriculture.³

xii. The three observations of (i) the continued deterioration in member country statistical collection capacity, (ii) the reduction of resource levels and staff capacities below a critical mass for many technical support activities in FAO's statistical units, and (iii) the need for FAO to

³ Independent External Evaluation of FAO, page 105

generate “estimates” for the production statistics of nearly 70 percent of the African countries, led the Evaluation Team to one overall conclusion: **FAO’s basic statistics programme is crumbling.**

xiii. With the operational environment for the FAO Statistics Programme as context, the major conclusions and recommendations of the Evaluation of FAO’s Role and Work in Statistics are provided below.

Major Conclusions and Recommendations

xiv. The **major conclusion** of the Evaluation is that the most pressing “emerging” data need is actually a “re-emerging” need: **to improve the capacity of member countries for collection and dissemination of country data** in order to make the best data available for use in analytic and decision support tools, with priority on the poorest countries, particularly those in Africa.

xv. **Building Back Better.** The deterioration in countries’ statistical capacity is by far the most significant of the quality issues affecting the FAO Statistics Programme. This will require marshalling the multi-disciplinary and diverse resources of FAO to be brought to bear on this systemic “quality” issue, requiring an urgent shift in priorities on the part of FAO and its donor partners. [Recommendation 3.1: Re-direct FAO resources towards **a renewed commitment to improving national statistical capacity**]

xvi. At the country level, the Evaluation Team noticed a lack of synergy and balance between FAO’s work in statistical capacity building and the quality of the data submitted to FAO by country statistical offices. For those countries that do continue to report annual statistics to FAO, a lack of knowledge or understanding of the FAO questionnaire and/or its underlying standards, classifications and units, limits any enhanced statistical capacity in place from directly influencing the quality of the data transmitted to FAO. [Recommendation 3.3: **Improve the quality of country submissions** by enhanced communication, training and dialogue with national statistical offices]

xvii. FAO, despite being a major international statistical organization, has no corporate quality framework, no set of **principles of good practice for the collection, processing and dissemination of international statistics**. The FAO Statistics Programme is in critical need of such a framework, a set of principles that are monitored and adhered to by all parts of the Statistical System. [Recommendation 3.5: FAO should develop a **corporate quality framework for statistics**, including a set of statistical standards and “best practices.”]

xviii. **Sustaining Statistical Capacity.** CountrySTAT holds potential to raise national and regional capacity to collect, analyse and disseminate food and agricultural statistics, and at the same time to increase national ownership of the data. CountrySTAT has the potential to become the “sustainability” element in FAO’s renewed statistical capacity building programme. With the emphasis on strengthening national capacities and national ownership, countries will be empowered through a better understanding of their agricultural sector and the issues related to food security and rural development. [Recommendation 3.4: The **pace of CountrySTAT implementation** should be **accelerated**, as resources allow]

xix. **Gender-Responsive Statistics.** The overall goal of the FAO regarding gender responsive statistics has been to improve the use of gender and rural population factors in agricultural statistics. For more than 20 years, the Organisation has attempted to achieve this by working with member countries to build capacity within national statistical programs to incorporate gender and population factors into their Agriculture Censuses and surveys. The Evaluation concluded that the FAO should continue its programme to ensure that statistical results can be obtained on a gender-specific basis. Where gender responsive statistics are being generated with FAO support, an ancillary programme should be initiated to assist countries (who request it) with the **analysis of the implications of gender responsive statistics**. [Recommendation 3.6: For every instance

where gender responsive statistics are being generated with FAO support, an ancillary programme should be initiated...]

xx. **A User-Oriented Approach to Integration of the Statistical System.** The Evaluation Team considered the integration of FAO data and dissemination to be a major priority for the FAO Statistics Programme. There needs to be a centralized mechanism, such as a data warehouse, to integrate the FAO databases and monitor the quality of the statistics disseminated. At the same time, there is a need to inject a strong user perspective in the design, development, and operation of FAO data management and dissemination systems. [Recommendations 4.1, 4.2 and 4.3: FAO should develop a **strategy for integrating statistical systems, based on a strong user perspective** and identified user requirements, and provide **full and free** access to all of its data and statistics]

xxi. **An Appropriate IT Basis for Moving Forward.** It is not clear whether the adopted IT strategy for FAOSTAT-2 is appropriate for moving the broader FAO Statistical System forward. An Organization-wide strategic approach to the long-term IT technical support of statistical information systems and applications is needed. [Recommendations 4.4 and 4.5: A strategic approach to long-term IT support for statistics is needed, and FAO should review its technology strategy for statistical information systems and develop a new approach]

xxii. **Visibility of FAO Statistics in the International Arena.** FAO maintains visibility in the international statistics community, particularly at the working level, partnering with other organizations on aspects of data collection and dissemination. But there is a noticeable vacuum in the leadership of agricultural statistics at the international level. FAO must take concerted action to regain its global leadership and advocacy role for statistics. Additionally, with added and more flexible resources devoted to capacity building and a Strategic Plan and Vision in hand, conditions would be conducive to develop longer-term partnerships in statistical capacity building. [Recommendations 5.1, 5.2 and 5.3: FAO should work to regain **international leadership** in agriculture statistics; the Organization should set up a **plan with major partners/donors for statistical capacity building**; FAO should create a **Remote Sensing Working Group**]

xxiii. There are several key recommendations in the area of **Management, Governance and Organizational Structure** and many recommendations from the Evaluation extend from, or are tied to, these key recommendations.

xxiv. **Work Flow in ESS.** Several of the recommendations for improving the quality of statistics at FAO, and at the country level, have implications for the organization of the functions, responsibilities and work of ESS. The Evaluation conclusion that there was a lack of feedback and/or direct communication between the NSOs and the respective FAO statistical units can be extended to the segmented responsibilities and poor communication between the two Services of ESS. Establishing flexible teams with a regional orientation would help to establish better communication between NSOs and FAO, and among staff of ESS, improving country client satisfaction and data quality. [Recommendation 6.6: Develop a series of **regional teams** from among the two Services of ESS]

xxv. **Need for Training and Skill Enhancement.** Within ESS and other parts of the FAO Statistical System, there is no in-house training for staff on statistics. If organizing staff in regional teams with the dual functions of capacity building and country assistance in data collection is going to be effective, there must be a programme of **continuous training** in statistical methods and applied statistics to maintain theoretical knowledge, and to raise skill and competence levels across the FAO System. [Recommendation 6.9]

xxvi. **Leadership and the Face of FAO Statistics to the World.** The FAO Statistical System is, at best, a loose confederation of statistical units and associated databases, with ancillary ties to other data systems in many parts of the Organization. The Evaluation Team found no evidence of any corporate mechanism to coordinate or otherwise provide oversight across the FAO Statistical

System. The Team found a real and pressing need for **leadership of the statistics programme**, from within the FAO itself, and from the international statistical community, who continue to look to FAO for much needed direction on agricultural statistics. [Recommendation 6.3: Establish the position of **Chief Statistician for FAO** with the mandate to lead **all of the FAO Statistical System** into the 21st Century]

xxvii. **Governance for a Decentralized Statistical System within FAO.** Implementing a formal decentralized statistical system in FAO will require a structured system of governance, management, and coordination focused on development of a Corporate Strategy; a process for setting priorities across the Statistical System; and a coordinating mechanism for monitoring implementation of the Strategy. [Recommendations 6.4 and 6.5: Establish a **Statistics Programme Steering Committee**, as the overarching governing body for the FAO Statistics Programme, and a **Statistics Coordination Committee** to bring coordination and coherence to the tactical statistical operations of the System]

xxviii. **Long-Term Strategy and Priority Setting.** A critical function of the Statistics Programme Steering Committee, and an important product of a management, oversight and governance policy, is the development of a **Strategic Planning Process** for the FAO Statistics Programme. Additionally, an important tool for improving internal transparency and coordination, as well as external visibility of FAO's Statistical System is the preparation of a biennial **FAO Statistics Programme of Work** which should provide an overview of all main statistical activities of the Organization. [Recommendation 6.1: FAO should implement a corporate **Statistics Programme Strategic Planning Process** and prepare a biennial **Statistical Programme of Work**]

xxix. **International Advisory Group on FAO Statistics.** Effective planning and prioritization for a global statistics programme, such as that of the FAO, should have substantive input and direction from major stakeholders, including member countries. An Advisory Group would provide substantive peer review and advice on the scope and direction of FAO's programme of work in statistics. [Recommendation 6.2: Restructure the old International Advisory Group on Agriculture Statistics into an **International Advisory Group on FAO Statistics (IAGFS)** with a **reinforced mandate** concerning **influence and accountability**]

xxx. **Priority for Statistics within FAO's Country and Regional Framework.** If FAO statistical work is going to receive a higher priority, that priority needs to be reflected in the country and regional FAO system. Country FAORs need to become more directly involved in the statistical development and reporting activities between FAO and member countries. At the regional level, the Regional Statisticians will be a critical link in an environment of heightened priority for Statistics within the FAO Programme, and key players in the re-orientation of the ESS approach to offering services to member countries. [Recommendations 6.7 and 6.8: Regional Statistician posts should be filled through rotation within ESS, and those in Africa and Asia should be expanded. FAO country offices should become more directly involved in statistics activities]

xxxi. **Recovering Lost Ground.** Resources for the Statistics Programme have deteriorated and reached a funding level which is significantly below what could be characterized as a minimum critical mass. The FAO Statistics Programme has serious problems as concerns both the coverage and, above all, the quality of its statistics. Quite simply, **FAO's ability to fulfil its basic mandate is in jeopardy.**

xxxii. The Evaluation Team identified a number of products that could be rationalized. **A thorough review of data collection activities** would eventually yield even more **efficiency savings** that could be redirected toward capacity building [see Recommendation 7.2: Data from countries with well-developed statistical systems should be harvested from web portals; FAO should review the scope, coverage and periodicity of all data collection activities, and decide if

any can be abandoned or have their periodicity or coverage adjusted]. It should be borne in mind, however, that those savings would not be enough to create sufficient momentum for raising the quality of national statistics or the FAO Statistics Programme.

xxxiii. The Evaluation Team recommended a number of organizational and governance measures that should be taken in order to bring coherence to the FAO Statistical System. These measures will, however, only be effective if they are supplemented by re-directed resources. The priority use of re-directed resources should allow for restoration of the critical mass required to revamp the FAO Statistics Programme both in terms of methodological development and in terms of building statistical capacity. Expanded resources for capacity building would allow FAO to take greater advantage of additional extra-budgetary funding and collaborative partnerships, by allowing a more focused approach to potential donors and partners, the latter in coherence with a comprehensive FAO capacity building strategy [see Recommendation 3.2 above]. The Evaluation Team analysed a number of options which are presented below in the form of three scenarios.

Scenario I: Status Quo

xxxiv. *Assumption:* No additional resources for FAO statistics, that is, the relative 2008/2009 resources for statistics in agriculture, forestry, and fisheries remain unchanged in the coming years. ESS continues to re-direct resources toward the most pressing data need namely, building/re-building statistical capacity. Resources would come from some resource savings from the reconsideration of data collection activities, and from an internal redirection of resources from the Global Statistics Service toward technical support for data reporting, statistical capacity building, and implementation of CountrySTAT.

xxxv. *Possible benefits:* On the assumption of **additional funding** commitments from donors, and based on performance of previous years, it would be possible to handle between 2-4 extra-budgetary projects per biennium (based on available staff and donor interest). The additional 2-4 projects would be a positive step, but not enough to stop the continued deterioration of country agricultural statistics collection capacity.

xxxvi. *Costs:* Resources re-directed from the Global Statistics Service, would result in a more limited global and regional reporting of basic agricultural statistics. FAO would release only statistics reported and verified from official country submissions, with limited imputation of data based on mirror trade statistics, and estimates of regional totals by FAO. Food Balance Sheets and Supply-Utilisation Accounts (FBS/SUA) would be calculated **only** for reporting countries and regional totals, leaving out a significant number of LIFDCs.

xxxvii. *Long-term results (5-15 years):* The FAO Statistics Programme would be marginalized and gradually become less relevant and useful for internal and external analyses and decision making. After abandoning critical elements, the statistics programme would inevitably reach the point of obsolescence and irrelevance.

Scenario II: Recovering Lost Ground

xxxviii. *Assumption:* Regular Programme resources are re-directed to the Statistics Programme in order to support 8 additional professional staff and increase the share of non-staff resources to 40% of the programme budget, which is FAO's organizational target level for such resources. This change would be equivalent to a 33 percent increase in Statistics Programme resources.

xxxix. *Possible benefits:* The increase in staff resources would allow the recruitment of critical capacity building expertise, and along with an aggressive fellowship programme, would allow 15-20 additional extra-budgetary projects per biennium. The increase in the non-salary funding would allow for a more substantive set of training and regional workshops and initiate the **Statistics Infrastructure Investment Facility** with US\$ 250,000 in Regular Programme funding. [Recommendation 7.1: Launch a **Statistical Infrastructure Investments Facility**, which would fund new or renewed statistical infrastructure projects within FAO]

xl. Re-building in-house expertise in the statistical support and capacity building areas is critical to this scenario. Re-building in-house expertise would create much stronger incentives for attracting donor support for capacity building projects and FAO would be increasingly seen as a credible partner.

xli. With additional resources for capacity building, fewer resources would be re-directed from the Global Statistics Service. This Service would retain resources that could supplement officially submitted data with data on primary crop production and trade from other secondary sources, including several from FAO (GIEWS, Food Crop Assessment Missions, etc.) for many of the LIFDCs.

xlii. *Long-term results (5-15 years):* If the relative resource level, proposed in this scenario, is at least maintained over the next 15 years, then FAO will continue to be a global leader in agriculture statistics, providing competent and comprehensive statistical services to member countries. To have a full-fledged 21st Century Statistical System would, however, require many more *resources* than envisaged in this scenario, which only aims at recovering lost ground and returning to a **minimum critical resource level** on which FAO can be considered a credible player and partner.

Scenario III: Partially Recovering Lost Ground

xliii. *Assumptions:* Regular Programme resources are re-directed to the Statistics Programme to support 4 additional staff and as in the preceding scenario, increase non-staff resources to 40% of the programme budget. In terms of funds, this option represents a smaller increase in resources overall. Due to the distribution of funds between human and non-human resources, it would have a distinctly different impact on the FAO statistical capacity and country technical support programme.

xliv. *Possible benefits:* The limited increase in staff resources would allow the filling of only a few critical gaps. More reliance on contract staffing of the capacity building programme would be required. While workable, this is not an ideal approach for an FAO-led capacity building programme. Nevertheless, such a funding approach could allow 10-12 additional extra-budgetary projects per biennium. The non-salary funding would allow for a substantive training programme to be implemented for contractors working on FAO capacity building projects, as well as, the funding of some activities mentioned in Scenario II.

xliv. *Long-term results (5-15 years):* As in Scenario II, if the relative resource level is maintained over the long term, FAO will, compared to Scenario I, improve both its role as a global *leader* in agriculture statistics and in the provision of acceptable statistical *services* to member countries. But, compared to Scenario II, the smaller in-house expertise in capacity building would not be enough to regain a **minimum critical resource (human) level** on which FAO can be considered a credible player, possibly making collaboration with partners more tenuous.

xlvi. Of the scenarios analyzed, only the one entitled **Recovering Lost Ground** would have any long term impact and match what the IEE calls a “*considerably greater priority to the provision of basic data and statistics.*” The **Status Quo** scenario would, in the long run, simply hasten the crumbling of the FAO Statistical System. [Recommendation 7.3: Regular Programme resources are re-directed to statistics in order to **support eight additional staff and increase non-staff resources to 40 percent of the programme budget**]

I. Introduction

A. BACKGROUND TO THE EVALUATION

1. FAO's work in the collection and dissemination of statistical information on food and agriculture represents a core element of the Organization's mandate. Article I of the constitution indeed requires the Organization to collect, analyse, interpret and disseminate information relating to nutrition, food and agriculture (the term "agriculture" and its derivatives includes forestry, fisheries and aquaculture). The first session of the FAO Conference in 1945 provided the rationale: "If FAO is to carry out its work successfully it will need to know where and why hunger and malnutrition exist, what forms they take, and how widespread they are. Such data will serve as a basis for making plans, determining the efficacy of measures used, and measuring progress from time to time." Member Countries reaffirmed this mandate in 2000 when formulating the Organization's strategic thrusts for the 2000-2015 period: Corporate Strategy E1 commits the Organization to building "an integrated information resource base, with current, relevant and reliable statistics, information and knowledge made accessible to all FAO clients."⁴

2. Past evaluations⁵ have found that FAO's mandate in the area of agricultural statistics remains as valid as ever, albeit the working environment has changed considerably. The dramatic reduction of ODA and FAO funding for statistical activities in agriculture and the generalized fiscal tightening that occurred across much of the world in the 1990s fell especially heavily on national capacities in statistics. FAO units dealing with agriculture, forestry and fisheries statistics have similarly suffered from emerging demands for quality data and additional analyses, against a backdrop of declining resources and technical capacity.⁶

3. Today, several institutions provide agricultural, forestry and fisheries data, including universities, the industry, private organizations and national governments. None, however, provide global statistics in such a wide range of areas as FAO. Heavy use is indeed made of FAO databases internally within FAO itself to produce analysis, "state of" publications, and projections. FAO's global statistics are quoted continuously and used externally in global analysis by academics, research institutions and governments. They are also used extensively by the private sector.

4. The Independent External Evaluation (IEE) of FAO called for "*considerably greater priority to the provision of basic data and statistics*" and a "*fundamental rethink*" of statistical activities which would heavily involve users and "*would consider how data output can be rationalized and [identify] requirements for new data or aggregations of data.*"⁷ It is thus expected that this evaluation⁸, mandated by the FAO Programme Committee in September 2007 following a specific request by the Director-General and a comment by the IEE that "*the time has come for a total re-examination of the statistical needs for the 21st century and how they can best be met,*" will be instrumental for the Organization to carry out its statistical activities more efficiently and effectively.

B. OBJECTIVES OF THE EVALUATION

5. The overriding objective of the evaluation was to assess the **relevance, quality and utility of the FAO statistical system**. The relevance, quality and utility of the system are closely linked to the

⁴ FAO Strategic Framework 2000-2015.

⁵ Evaluation of Programme 2.2.2 (Food and Agricultural Information) – Activities Related to Agricultural Statistics in the Context of FAOSTAT (2003) & Independent External Evaluation of FAO (2007).

⁶ Evaluation of Programme 2.2.2 (Food and Agricultural Information) – Activities Related to Agricultural Statistics in the Context of FAOSTAT, paragraph 82.

⁷ Independent External Evaluation of FAO, page 105.

⁸ The Terms of Reference of the Evaluation can be found in Annex 1.

need to focus statistical collection and dissemination on the key priority issues facing FAO and its member nations. In this context, three overarching questions were important to consider:

- How well does the FAO statistical system meet Members' and users' needs at global, regional and national levels?
- To what extent does FAO's statistical programme conform with, and contribute to, FAO's strategic and programme priorities?
- What is the degree of complementarity and synergy with products and services provided by other organizations?

6. These three overarching questions formed the prism through which the Evaluation Team reviewed and assessed the more specific issues identified for the evaluation of FAO's role and work in statistics:

- a) Emerging Statistical Needs in the 21st Century
- b) Quality of FAO Statistical Products and Services
- c) Information/Data Management and Integrated Dissemination
- d) Collaboration with Other Institutions: FAO's Role in the Global Architecture for Statistics on Agriculture, Forestry and Fisheries
- e) Management, Organisational Structure, and Resources for Statistical Work.

C. EVALUATION APPROACH AND METHODOLOGY

7. The **research, field work and analysis** for the evaluation was based on three components: i) a series of structured interviews with stakeholders including major users, collaborating institutions, and a sample of National Statistical Offices (NSOs); ii) surveys of users of FAO data and an instrument sent to NSOs in member countries; and iii) a series of thematic studies. The evaluation also benefited from the advice of an Expert Panel throughout the process.

8. **Structured Interviews** (based on Interview Check Lists for statistical organizations, major users and collaborating institutions) were held with over 30 different partner institutions and organizations in North America, Europe, Asia and Pacific, Latin America and the Caribbean, and Africa.

9. Visits were also undertaken to statistical centres active in the international arena such as: USDA-NASS, the UN Statistical Division, the UN Population Division, PARIS-21, UNECE, ILO, WHO and DG-Eurostat and institutions that are major users of FAO statistics such as: USDA-ERS, IFPRI, the World Bank, IMF, UNDP, OECD, DG-Agri and DG-Fish of the European Commission, and WTO.

10. Three regional missions were undertaken to Africa (Ethiopia and Niger, including the FAO Sub-regional office in Ethiopia), Asia (China, Vietnam and Thailand, including the FAO Regional Office in Thailand) and Latin America and the Caribbean (Peru, Chile, Barbados and Saint Lucia, including the FAO Regional Office in Chile and the FAO Sub-regional Office in Barbados). Selection criteria for the countries visited included: i) having been major recipients of FAO technical assistance in statistics, ii) being important users of FAO statistics (e.g. for trade), and iii) hosting regional bodies with a major role in statistics, such as the UN regional economic and social commissions, and regional organizations eg. the African Union, AGRHYMET, NACA and SEAFDEC. As part of the country visits, **two workshops with regional stakeholders** were conducted in Latin America and in Asia. Besides FAO regional staff, representatives from governments, NGOs and partner organizations such as ECLAC, IICA and INFOPECSA (in Latin America and the Caribbean) and ESCAP, SEADFEC and INFOFISH (in Asia) attended the events. Desk reviews of projects in countries not visited by the missions (Gabon, Rwanda, Congo and Cambodia) were also conducted.

11. Five **Thematic Studies** providing a more in-depth assessment of selected key areas were prepared by the evaluation team on:

- FAOSTAT (Management, Oversight and Governance)
- Fisheries Statistics

- Forestry Statistics
- Statistical Information Management and Dissemination
- Information Technology for Statistics.

12. In view of the “*special focus on FAOSTAT*” requested by the Programme Committee to this **evaluation**, the full report of this thematic study is provided in Annex 2. The findings, conclusions and recommendations of the other studies have been included in the main report.

13. **Two Survey Instruments** were developed and implemented to gather views and suggestions on FAO's role and work in statistics. One was oriented toward users of FAO data products and gathered **user** perceptions of the relevance, quality, functionality and accessibility of FAO data. The second survey instrument was addressed to the National Statistical Offices of Member Countries in charge of Food and Agricultural Statistics and gathered perceptions of the country's need for support and assistance with data collection, and the extent and quality of FAO's assistance, if provided.

14. The first survey was sent to 350 “major users” identified by FAO's major producers of statistical data). A total of 73 responses were received, just over a 20 percent response rate. This was not a large survey and had a relatively low response rate, so the results can be used only to look at general patterns and to get a “sketch” of the importance of various categories of data to users. A summary analysis of the results is provided in Annex 3.

15. The second survey questionnaire, almost identical to the one sent by the IEE⁹, was sent to 127 Chiefs of Food and Agriculture of NSOs who had not responded to the original IEE questionnaire in early 2008. The responses from both issuances of the questionnaire were combined for analysis. In total, 107 responses were received, 70 from developing and transition countries and 37 from developed countries. By region, there were 17 responses from Africa, 20 from Developing Asia and 16 from Latin America and the Caribbean, allowing some break-out for regional comparison. A summary analysis of the results is provided in Annex 4.

16. The evaluation's assessment of FAO's role and work in statistics was based on data and information gathered from the components identified above, and applied against standard evaluation criteria:

- a) **Relevance and responsiveness** to members' needs and demands for statistics outputs and services, including the:
 - i) degree to which FAO's work on statistics is focused on topics and problems assigned priority by countries, regions and international bodies;
 - ii) relevance of work to individual countries' demands and needs, especially those of the poorer countries, including complementarity between FAO's support and that provided by other sources;
 - iii) extent to which work represents the most appropriate response from FAO and takes advantage of FAO's comparative advantages and takes account of the work of other organizations;
 - iv) flexibility of response in the light of changing demands; and
 - v) relevance of the activities to the intended target audiences.
- b) **The efficiency** (in terms of use of limited resources) of FAO's institutional capacity in statistics, including:
 - i) the extent to which FAO is able to draw on its areas of particular technical competence;
 - ii) the extent of synergy and balance between normative and operational work;
 - iii) the extent to which the Organization makes use of its multi-disciplinary strengths; and
 partnership and coordination with other international and national organizations.

⁹ The IEE directed in late 2006 a questionnaire to the Chiefs of Food and Agriculture National Statistical Offices (NSO) of which it received 64 responses.

- c) **The quality** of FAO statistical products and technical services, including in the case of products such factors as appropriateness, relevance, accuracy, comprehensiveness, and accessibility.
- d) **Effectiveness, impact** on the primary and ultimate target beneficiaries, and **sustainability** of outcomes and impacts, including the:
 - i) extent to which statistics assistance has led to improved institutional capacity in countries and global knowledge; and
 - ii) degree to which assistance has led to increased national capacity in identifying the food insecure and measuring food insecurity.

17. An **Expert Panel** consisting of representatives from international agencies working in statistics, government institutions and bilateral agencies was also assembled to provide guidance in the identification of key issues and to discuss the findings and recommendations. This group of experts met in Rome twice (February and May 2008) and in both meetings provided valuable feedback to the evaluation team. Among the key contributions of the Expert Panel are the refinement of the list of critical issues identified for the evaluation (see paragraph 6) and suggestions for “*An Ideal FAO 21st Century Statistical System*” that served as the analytical framework against which FAO’s work in Statistics was assessed (see Section I.E). In addition, the evaluation of the quality and utility of FAO’s statistical products and services focused on the data quality points identified in the FAO Data Quality Framework (see Section III.A).

D. THE FAO STATISTICAL SYSTEM

18. As noted, FAO’s work in the collection and dissemination of statistical information on food and agriculture represents a core element of the Organization’s mandate. It covers almost all sectors from agriculture, livestock, forestry, fisheries to land and water. Major producers of statistical data are the Statistics Division (ESS); the Forest Assessment and Reporting Service (FOIM), and the Fisheries and Aquaculture Information and Statistics Service (FIES), and to a lesser extent the Land Tenure and Management Unit (NRLA) and the Water Development and Management Unit (NRLW). The main features of these units are summarized in Table 1.1, which provides their respective programmes and statistical related areas of work for the biennium 2008-09¹⁰.

19. ESS has a “data assembly role” within the Organization, and is the lead technical unit responsible for collecting crop and livestock statistics. FOIM and FIES play a similar role in forestry and fisheries and aquaculture, respectively, while NRLA and NRLW collect and disseminate basic statistics on land and water. The main statistical series produced by these units are contained in FAOSTAT, which is also where most institutional collaboration between ESS and the other units takes place. In addition, the Fisheries, the Forestry and the Natural Resource Departments develop and maintain their own databases (FISHSTAT & FISHERS in the case of Fisheries; FORIS in Forestry; and Aquastat & Agro-MAPS in Water and Land), which contain more detailed and/or specific information that is not covered by FAOSTAT. These units also provide technical assistance to member countries for the improvement of their statistical systems, either alone or in collaboration with other units (e.g. with ESW¹¹ for gender disaggregated data collection and analysis; with NRCE¹² for remote data gathering; and with AGAL¹³ for livestock data analysis). Institutionally, they also tend to work with separate international commissions and other bodies regarding their specific statistical activities. ESS in particular collaborates with regional statistical commissions (for which it provides

¹⁰ The Evaluation did not carry out a specific analysis of implementation of the programme entities of FAO’s Medium-Term Plan in Statistics because the recent (and ongoing) major programming and organizational changes in FAO made it impossible to extract clear information under these entities over time.

¹¹ Gender, Equity and Rural Employment Division

¹² Environmental Assessment and Management Unit

¹³ Livestock Information, Sector Analysis and Policy Branch

the secretariat), international institutions active in agricultural statistics (such as DG-EUROSTAT, USDA, OECD/Paris 21, etc.) and UN sister agencies (UN Statistical Division, ILO, WHO, etc.).

20. Statistical activities within FAO are not limited to the programmes and units listed in Table 1.1 – in fact many units maintain their own specialized databases in their respective technical subject areas, with varying degrees of interface with the main system. For example, the Trade and Markets Division (EST) has a long tradition in statistical analysis of selected internationally traded commodities. The Livestock Division (AGA) maintains an extensive collection of livestock statistics in its Global Livestock Production and Health Atlas (GLIPHA), while the Nutrition Division (AGN) produces analytical statistics on nutritional indicators on a regular basis. FAO's role in providing data on food production, markets and risks of food insecurity for early warning and forecasting purposes at regional, national and sub-national levels is another area, with statistical data being collected, processed and disseminated by FAO programmes such as the Global Information and Early Warning System (GIEWS). The work of these units is not being assessed by this evaluation since they have either recently been evaluated¹⁴ or will be subject to a more specific evaluation shortly.¹⁵

¹⁴ The statistics related work of EST was assessed in 2007 during the Evaluation of FAO's Work in Commodities and Trade; GLIPHA was reviewed in the 2005 Evaluation of Livestock Production, Policy and Information.

¹⁵ An evaluation of FAO's information systems for food security that is just now starting will assess GIEWS and the country nutrition profiles.

Table 1.1: Programmes and Units Responsible for Statistical Activities

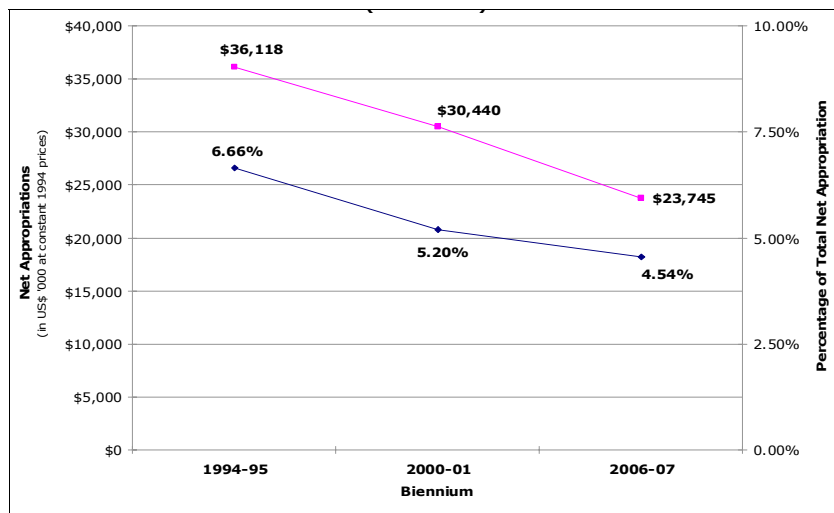
Programme Entity (PE)	Responsible (Lead) Unit	Main Area(s) of Work
<ul style="list-style-type: none"> 3DP02: Global Food and Agriculture Statistics 	Global Statistics Service (ESSG)	<ul style="list-style-type: none"> Compilation and dissemination of global statistics on production, trade, prices and resources (inc rural development, government expenditures and assistance to agriculture), as well as the development of Food Security Indicators based on Household surveys, Supply Utilization Accounts and Food Balance Sheets.
<ul style="list-style-type: none"> 3DP04: FAOSTAT/ Country STAT and Coordination of Statistics at FAO. 	Office of Director (ESSD)	<ul style="list-style-type: none"> Coordination of FAO statistical activities and inter-agency statistical activities, including internal management of FAOSTAT and CountryStat; publication of FAO Statistical Yearbooks; MDG monitoring and the development, coordination and monitoring of statistical classifications in FAO.
<ul style="list-style-type: none"> 3DA01: Multi-Agency Programme for Capacity Building in Food and Agricultural Statistics 3DP03: Surveys and National Statistical Information Systems. 3DS01: Technical Support Services to Members and the Field Programme. 	Country Statistics Service (ESSS)	<ul style="list-style-type: none"> A joint WB-USDA-FAO capacity building initiative focussed in Africa, it provides TA in the form of need assessments for national strategic plans; produce sub-regional and national databases; publish good practices and studies, and hold regional training courses. Development of the World Agricultural Census Programme, methodological support for national systems of agricultural statistics and Regional Experts Consultations on Food and Agricultural Statistics. Provides technical support in project formulation and backstopping.
<ul style="list-style-type: none"> 2GP02: Assessment, monitoring and reporting on forest resources products and institutions 	Forest Assessment and Reporting Service (FOIM)	<ul style="list-style-type: none"> Undertakes the global forest resources assessments; publish the Forest Products Yearbook (inc production, consumption and trade of forest products); develop and maintain comprehensive country information about forests, forest products, and forest institutions; disseminate country information through the FAO internet site; and develop and maintain "NFP Updates" and information about forest policies and institutions.
<ul style="list-style-type: none"> 2HA01: Support to the Strategy for Improving Information on Status and Trends of Capture Fisheries 2HP01: Provision of Fisheries Information and Statistics 2HS03: "Technical Support Services to Members and the Field Programme". 	Fisheries and Aquaculture Information Statistics Service (FIES)	<ul style="list-style-type: none"> Further development of the Global Information System for Fisheries (FIGIS) than includes an expanded Fisheries Statistical working system (FISHSTAT) with more data sets (regional capture, fleet, fish consumption, and fishery commodities domains) and an upgraded dissemination module. Collection of statistics from countries, regional fishery bodies, international shipping registers, fishing industry; publishing statistics; assisting members by developing/ upgrading their national statistics systems, etc. Provides technical support in project formulation and backstopping.
<ul style="list-style-type: none"> 2KP02: Land and Water Knowledge Management, Information Systems, Databases and Statistics 	Land and Water Division (NRL)	<ul style="list-style-type: none"> Support to the development and maintenance of: <ul style="list-style-type: none"> Aquastat The Soil and Terrain Database (TERRASTAT) Sub-national land use information (Agro-Maps)

21. **Financial Resources:** The share of Regular Programme resources allocated to statistical activities (which includes all or part of the PEs listed in Table 1.1) has been substantially reduced between 1994-95 and 2006-07, falling from **6.7 percent** to **4.5 percent** of FAO's net appropriations for technical work.¹⁶ Statistics received additional financial support in 2003-05 in the form of a one-time special allocation for upgrading FAOSTAT. Still, total net appropriations for statistical activities have fallen in real terms by over 34 percent, in the context of an overall 22 percent reduction in the

¹⁶ From the IEE Final Report. Includes allocations to Chapters 2 & 3B, 3C, 3D, 3F, 3G, 3H of FAO's Programme of Work and Budget.

Organization’s budget. The 2008-09 FAO maintenance budget has done very little to remedy this situation.

Figure 1.1: Evolution of Resources for Statistical Activities



22. The core statistical activities within ESS have suffered a dramatic budget cut in real terms of more than 50%, from US\$ 17.8 m in 1994-95 to US\$ 7.9 m in 2006-07 (in constant 1994 dollars). A major part of this decline is explained by the restructuring of the division (e.g. responsibility for WAICENT, FIVIMS, etc., shifted from ESS to elsewhere; posts for FAOSTAT maintenance were abolished; ESSA was absorbed into ESSG, etc.), and the general shrinking of the Organization’s budget. Financial restrictions have indeed become more noticeable in the last few years as strong demand for basic statistics (both at global and country level) and new data needs emerged, while limited or no room is left for further efficiency savings. Major programme and organizational changes in recent years impede a meaningful assessment of the evolution, beyond the snapshots of Figure 1.1, of financial resources for forestry, fisheries, land and water statistical work, but they have also been affected by successive budget cuts.

23. **Staffing:** Established Professional posts in ESS (including regional and sub-regional officers) decreased from 32 in the biennium 2002–2003 to 26 by the end of 2007. The General Service category experienced even larger losses: posts declined from 40 to 20; a decrease of 50 percent in the same period. In the last three biennia, staffing for the statistics group within FIES has been relatively stable, comprising 5 professionals and 6 GS staff plus 3 consultants hired on a regular basis for short periods. A capacity building officer post has however been lost recently and a fleet statistician post has been vacant which causes serious delay and suspension in processing and dissemination of fleet-related information, an area of high and increasing demand. In the case of forestry there have been no major fluctuations in terms of staff; a total of 12 posts (6 general service posts and 6 professional posts and above) were planned for FOIM in 2006-07 and 2008-09. However, the nature of the interventions and the demands for information on forestry resources have increased over time. There is no full time staff devoted to other areas of statistical work such as livestock, land, water or gender.

24. **Field programme:** During the review period (2002-2007), ESS carried lead responsibility for the implementation of some 81 field projects. Of them, 50 were Technical Cooperation Programme (TCP) projects funded out of FAO’s own budget (18 in Africa; 10 in Asia and the Pacific, 10 in Latin

America, 12 in the Near East and Europe). The topic by far most commonly supported by the TCP projects was the agricultural census sector (31 TCPs, as well as 11 trust funds), followed by support to the rehabilitation/improvement of national statistical systems (14 TCPs). The three regional field missions and related desk reviews undertaken for this evaluation examined some 15 field projects, including 10 TCPs and 5 trust funds projects. ESSS was the lead technical unit (LTU) for all the TCP projects.

25. Since 2002, FIES have managed 8 TCPs and 1 extra-budgetary funded project (worth US\$ 1.6 million funded by Japan in support of FIGIS) which dealt with information activities. In addition, it has received funding from the Programme of Global Partnerships for Responsible Fisheries (FishCode and the FishCode Trust) worth US\$ 3.5 million to support the development of fisheries statistics. In addition, the service contributed to several projects under other lead technical units. These included projects to re-organizing fishery statistics services, setting up statistics and information systems, and supporting the development of a methodology for producing and collecting statistics.

26. FOIM does not have a large field programme. In fact, there is only 1 TCP project led by this unit in the review period which is part of the Global Forest Resources Assessment 2010. Within its framework, FOIM is contributing to the preparation of a global remote sensing survey in collaboration with NRCE. However, other units in the Forestry Department are implementing projects with specific statistical components. In particular, FOMR is currently implementing a US\$ 2.8 million project on monitoring, assessment and reporting on sustainable forest management. The unit is also managing two projects on integrated land resources (for a total budget of US\$ 717,000), and contributing to national forest inventories in Honduras and Lebanon for a budget of US\$ 648,000. In 2003, FONS (now FOED) completed a US\$ 920,000 trust fund project which aimed, among other things, to strengthen the national capacity in South Asia to collect, compile and disseminate reliable and up-to-date information on forestry, to analyse the forest sector and to make that information available to the policy decision makers.

E. AN IDEAL FAO 21ST CENTURY STATISTICAL SYSTEM

27. A central issue for the Statistical Evaluation Team was to explore to what extent FAO has a Statistical System that can respond to the emerging data needs of the 21st century, taking into account that the environment in which a 21st Century International Statistical System will have to operate will be influenced by at least five key factors:

- a) **Globalization.** The FAO Statistical System has moved well beyond the original mandate to collect information on food and agriculture, with a predominant focus on countries and commodities. FAO's mandate has been expanded by the globalization of issues on food and agriculture. Issues such as agro-environmental degradation, climate change, biological diversity, rising food prices, and poverty and hunger alleviation, are not simply individual country issues, but global issues. Addressing these global issues will demand a much different approach to the way statistics are collected/generated, disseminated, and shared among international organizations, research institutes, non-governmental organizations (NGOs), and national governments.
- b) **Increased competition and opportunities for collaboration.** The "Globalization" of the International Statistics System, brings with it increased competition for sources of data and increased opportunities for collaboration. If there is a demand for statistics, and if official statistical sources, national or international, do not satisfy this demand, then there are, and will always be, room for private sources, to which access is fee based. FAO already relies to some degree on such sources, and many of FAO's users have access to commercial and/or proprietary data that better address their needs than FAO data, for example on trade, production inputs (e.g. fertilizers, pesticides, etc.), and food/commodity prices. In the future, more and more data will be compiled by commercial sources, for example on bio-fuels. This will increasingly require innovative collaborative activities for capture and dissemination of data on key global issues. Additionally, other international organizations have their competitive advantages in other areas of statistics, which are often, but not always, complementary to those of

FAO. The FAO Statistical System can not work in isolation, but must be part of the dense global network of International Statistical Systems. Hence, there is also the issue of comparability and interconnectivity with the statistical domains of other international organizations' statistical systems.

- c) **Emerging new technologies.** The rapid developments in Information and Communications Technologies (ICT) have radically changed the structure of modern statistical systems whether they are national or international. ICT have led to profound changes in operating statistical systems, resulting in higher productivity, quality and efficiency in practically all phases of the statistical production, from data collection and capture to tools for dissemination and analysis. As well, there are new and growing developments with respect to geo-spatial data and remote sensing information that can potentially bring new dimensions to data on agriculture, forestry and fisheries. There is the capability to acquire more sub-national detail, important for issues like poverty, hunger, and economic livelihoods, but also the opportunity to look beyond national boundaries, for example to watersheds and river basins, important to climate change and various global resource scarcity issues. But not all countries and not all organizations have kept up with the pace of the development in ICT and new statistical methodologies.
- d) **Changing needs of data users.** The demands on global statistical systems are not as static as they used to be. As is illustrated by the recent global surge in prices of agriculture products, the intensity in demands for certain statistics can arise very quickly. A 21st Century Statistical System should have the mechanisms in place to respond to such sudden demands. This implies increasing consultations with key users and suppliers to ensure the continued relevance of the statistical system. There will also be a need, expressed by users answering the evaluation questionnaire, for more integrated data bases that can synthesize critical data from several, already complex data sets, to bring a more comprehensive set of data and information to bear on 21st Century global issues.
- e) **Quality of country statistical capacity.** FAO, as an International Statistical Organization, collects a limited number of statistics focused on agriculture, forestry and fisheries from a large number of countries. The quality of the statistical capacity varies greatly by country, and can vary, as well, over time. For an International Statistical Organization, the quality of the overall programme will always be highly dependent on the quality of the country statistical systems.

28. An overarching **Vision** for a 21st Century Statistical System might be:

"A system that provides timely, high-quality, internationally comparable and understood data to internal and external clients based on its core tenets to: minimize the reporting burden on member countries, enhance coherence of data between countries over time and between domains, eliminate obstacles to data access, and communicate effectively with data providers and users."

29. Such a Vision for a 21st Century FAO Statistical System can be characterized by several important attributes within each of the following basic processes of a statistical system: data collection; processing, storage and dissemination; and management, oversight and resources (including partnerships).¹⁷

30. To this end, a short characterization of the structure of an ideal, but realistic system is depicted in Table 1.2. Based on the Evaluation Team's assessment of the current FAO Statistical System, each

¹⁷ Based on N. Heerschap and L. Willenborg. "Towards an Integrated Statistical System at Statistics Netherlands", International Statistical Review, Vol.74, No.3 (2006); Denis Trewin. "An Effective Global Statistical System: A Pre-requisite for Consistency in Global Measurement"; G. Brackstone. "Canada's Statistical System and the Management of Quality" (2002); and several papers presented at the UNECE/OECD/Eurostat Meetings on Management of Statistical Information Systems.

of the components identified as important to an Ideal 21st Century Statistical System is compared to FAO's current functioning system and assigned a performance rating of:

- Fully met
- Partly met
- Limited
- Not met

31. More in-depth analysis of the discrepancies between the ideal and the actual system will be discussed in the following chapters, and recommendations will be made for narrowing the gap between the actual and ideal statistical system for FAO.

Table 1.2: The Ideal 21st Century FAO Statistical System

Process	Features	Assessment of FAO Statistical System			
		Not met	Limited	Partly met	Fully Met
Data Collection	1. Has reversed the declining trend in member country capacity to collect and report agriculture statistics (see section III.B)	Not met			
	2. Provides training, guidance and assistance to countries to ensure full reporting of statistics based on an understood common set of definitions, standards, and classification (see section III.C)	Not met			
	3. Devolves data validation and quality control to country level, as member countries institutionalize statistical capacity and take ownership of their data (see section III.C)	Not met	Limited		
	4. Manages electronic data reporting through automatic web capture of data (see section III.C)	Not met			
	5. Has regular communication/consultation with NSOs and other national reporting organizations, allowing for critique & feedback (see section III.D)	Not met	Limited		
	6. A Statistical Quality Framework is in place with its principles monitored and adhered to by all parts of the Statistical System (see section III.D)	Partly met		Partly met	
		Not met	Limited		
Processing, storage and dissemination	1. Adopts an active dissemination policy based on input from the heaviest users, including content-driven navigation properties, and multi-dimensional sort and presentation facilities (see section IV.A)	Not met			
	2. Interpretability of data and “tables” is fully supplemented by metadata and clear definitions of concepts, methods used, and data quality indicators (see section IV.B)	Not met	Limited		
	3. Has in place a common set of standards supporting data collection, processing, dissemination and management (see section IV.B)	Not met			
	4. Has a business model and strategic approach for long-term technical support of the Statistical System (see section IV.C)	Not met			
	5. Has in place an integrated data system based on standardised tools and workflow management that allows dissemination from a central data warehouse (see section IV.D)	Not met	Limited		
Management, Oversight and Resources (inc	1. Is the acknowledged leader in the international agricultural statistics community, setting, advocating and coordinating the international agenda (see section V.A)	Not met			
	2. Collaborates and partners for the joint collection of data to improve efficiency and reduce respondent burden. To this end,	Partly met		Partly met	

Process	Features	Assessment of FAO Statistical System			
		Not met	Limited	Partly met	Fully Met
partnerships)	implements international standards and norms (see section V.A)	Partly met		Partly met	
	3. Has priority focus on technical support in areas of statistical methods and building national statistical capacity, with improved donor coordination (see sections V.B, VI.E, VI.F, VI.G and VII.C)	Not met	Limited		
	4. Uses the most up-to-date geo-spatial technologies and methods to expand geographic and sub-national dimensions, in collaboration with leading external users/producers. (see section V.C)	Not met	Limited		
	5. Has in place a long-term strategic plan as well as a system for adjusting priorities according to the changing needs of its global clients and of the FAO Programme (see section VI.A)	Not met			
	6. Process for stakeholder oversight, review and performance measurement undertaken regularly (see sections IV.A and VI.B)	Not met			
	7. Has in place a system of leadership, oversight and governance, allowing coordination and coherence across the FAO Statistical System (see sections VI.C and VI.D)	Not met			
	8. The work environment and productivity benefit from ongoing programme of training and skill enhancement (see section VI.H)	Not met			
	9. Systematically prioritizes and rationalizes resources, providing flexibility in meeting new data demands (see section VII.A and VII.B)	Not met			
		Not met			

II. Relevance of FAO’s Work in Statistics

32. As a basis for assessing the relevance of FAO’s work in Statistics, the evaluation team used the wide array of views and references gathered during the evaluation process on the importance and value assigned to FAO statistical data and the expressed need for FAO’s technical services.

33. The section also examines emerging data needs and issues that do, and will continue to, influence stakeholders’ perspectives on the present and future relevance of FAO’s Statistics Programme.

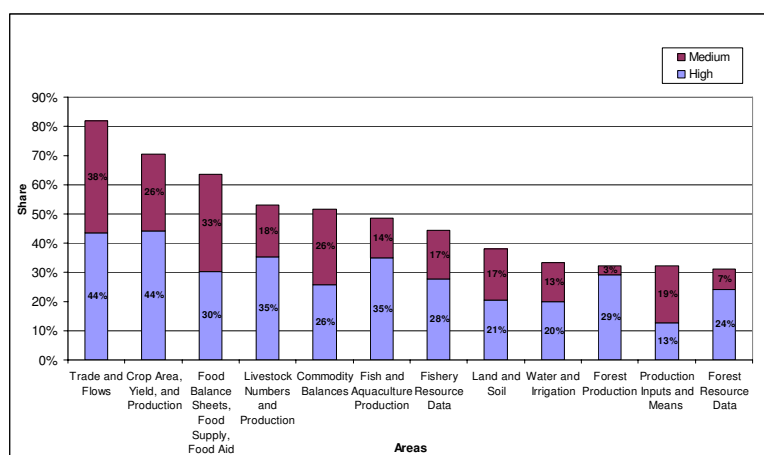
A. RELEVANCE OF FAO’S WORK: STAKEHOLDER PERSPECTIVES

34. Information in this section is taken from the two sets of survey results with further commentary from in-depth interviews, findings from the regional missions, and results from previous surveys conducted in the context of Auto-Evaluations of elements of the FAO Statistics Programme.

Perspectives of Users of FAO Statistical Data

35. Users of FAO statistical data were asked through a survey to answer a series of questions about broad categories of data that were seen as a priority for the work they do, and then asked to compare FAO as a source of that data with other data providers, if any. The categories are provided in Figure 2.1, as well as user responses indicating that the category of data was either a High or Medium priority for use in their work (other possible responses were “Low Priority” and “Not at all useful”).

Figure 2.1: Users perceptions of the data categories relevant to their work

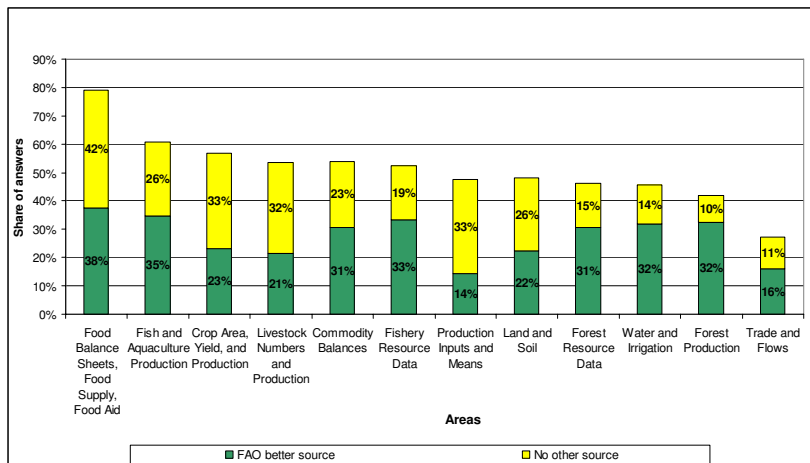


36. Overall, 82 percent of respondents thought that trade and flow data was of significant value to the work they do – 44 percent found it a high priority and 38 percent a medium priority. Altogether, five of the twelve types of data were of significant value to more than 50 percent of the respondents. And even the lowest-ranked categories had over 30 percent of respondents indicating that they were important for the work they do.

37. Users were also asked to rank FAO as a source for data in the various categories, compared to other sources. The possible responses were: “Other sources are better than FAO”; “FAO and other

sources are about the same”; “FAO is a better source”; “There is no other source”. The results depicted in Figure 2.2 combine two responses: “FAO is a better source” and “there is no other source.”¹⁸ The combined responses to these two questions provide an indication of FAO’s comparative advantage in supplying users with the data. With the exception of Trade and Flow Data, all data categories are above 40 percent, i.e. over 40 percent of respondents perceived that FAO is the better, or only, source for data they need for work and decision making. The results of the survey were confirmed through the interviews and the regional missions. For example, several stakeholders told the Evaluation Team that FAO was the only place to go for global coverage of Food Balance Sheets, Crop and Livestock Production, and Fish Production.

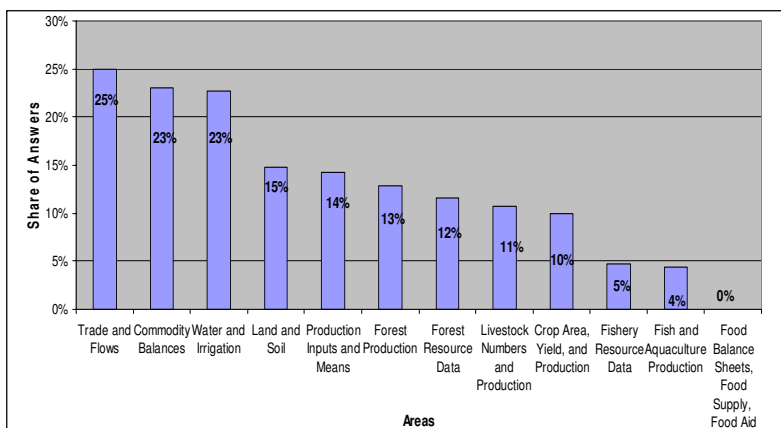
Figure 2.2: FAO vs. alternative data sources



38. The results depicted in Figure 2.3 (below) are, in essence, the flip-side of the results in figure 2.2. The results highlight those data categories where respondents said other sources were better than FAO as a source for data. The results are striking, with almost one-quarter of the respondents saying there are better sources for Trade and Flow Data, Commodity Balances, and Water and Irrigation. It is interesting to note that the data category that was most relevant to users (Trade and Flows) was also the one for which users had alternative, and better, sources. The same is true for Commodity Balances, though not to the same degree. Both these results were also confirmed by interviews and the regional missions. A significant number of stakeholders interviewed said they go to USDA for more current information on Commodity Balances.

¹⁸ This response was the user’s perception that there were no other sources available for the specific data they wanted.

Figure 2.3: Alternative sources are considered better than FAO



39. One overall conclusion from the survey results, the interviews and the regional missions, is that there is heavy dependence on FAO for agriculture, forestry and fisheries data. Users obviously see value in FAO data because it brings new information to their decision needs. In addition, with the possible exception of data on trade, commodity balances, and water, FAO’s programme of statistics seems to be complementary (no significant overlap) with other data providers.

40. The Evaluation Team found that China was a major user of FAO data – rivalling major users such as USDA, the European Commission (DG-Agri and DG-Fish in particular), and the WTO – with two exceptions: for commodity balances (USDA) and for current market price data (Reuters). Several users told the Team that other sources of trade data were available, such as COMTRADE or the Global Trade Atlas. The latter has greater detail in terms of HS¹⁹ code disaggregation and has monthly trade statistics for many developed countries. But users were quick to point out the cost of that proprietary data base. Concerning other sources for data on water, the Evaluation Team learned that there are 24 UN organisations that collect and/or analyze data on water. So, depending on the user’s specific need, there are other potential sources just within the UN system.

41. The survey, the interviews and regional missions’ results focused heavily on external users of FAO statistics. But some of the heaviest users of FAO statistics are internal to the Organization itself. FAO data form the statistical base for much of the Organizations work on global issues. FAO statistics undergird much of the analyses and forecasting which reinforces knowledge transfer and decision making through FAO’s major flagship publications, such as the State of Food Insecurity in the World (SOFI), the State of Food and Agriculture (SOFA), the State of the World’s Forests (SOFO) and various assessments of the Status and Trends of Forests, Fisheries and Aquaculture. All address major FAO priority programme issues, such as agro-environmental degradation, bio-diversity, climate change, and poverty and hunger alleviation.

Perspectives of Clients of FAO Technical Services

42. The main clients of FAO technical services in statistics are Agricultural Statistics Units in developing countries. The evaluation team conducted a survey which asked Chiefs of Food and Agricultural Statistics of NSOs from all over the world to indicate their needs for statistical support in the following categories:

¹⁹ Harmonised Commodity Description and Coding System.

- Agriculture and livestock statistics capacity building
- Agricultural census and surveys
- Forestry statistics capacity building
- Fisheries statistics capacity building
- Statistical data storage and dissemination systems
- Using statistics for planning, analysis and monitoring and evaluation; and
- Early warning systems, crop forecasting.

43. The responses for the four categories of most interest to this Evaluation are provided in Table 2.1. For all developing and transition countries together, over half said they needed assistance in Agriculture and Livestock Survey Capacity Building (52%) and in Agricultural Census and Surveys (54%). For Africa, the responses were 94 percent and 97 percent respectively for the same categories. Capacity building assistance for forestry and fisheries were needed by over 40 percent of the developing and transition countries. For Africa, over 60 percent said they needed assistance in Forestry and Fisheries capacity building.

Does your country need help in the following subject areas?	Share of countries responding “Yes”
Agricultural Census and Surveys	54%
Agriculture and Livestock Statistics Capacity Building	52%
Fisheries Statistics Capacity Building	44%
Forestry Statistics Capacity Building	41%

44. The NSO survey results confirmed the findings of the regional missions that albeit FAO’s work in statistics was considered highly **relevant** in every country visited by the evaluation team, a greater need for statistical support was found in Africa, followed by Developing Asia and Latin America and the Caribbean.

B. EMERGING DATA NEEDS AND ISSUES FOR THE 21ST CENTURY

45. Through in-depth interviews with stakeholders in many countries as well as questionnaire surveys among NSOs and major users, it is clear that FAO is recognized as having a fundamental global role in providing food and agriculture statistics as well as technical assistance services. More than 90 percent of the respondents to the questionnaire to the NSOs consider FAO the “best source of global statistics” for food and agriculture and the “organization with the best knowledge and experience to provide technical support and advice on matters relating to the collection of agricultural, forestry, and fisheries statistics”. While at the same time maintaining the collection, processing and dissemination of existing data series, there are increasing demands for new statistics and for integration of data and information to bring a broader body of evidence to bear on issues such as agriculture and environment, climate change and bio-fuels.²⁰

Stakeholder Perspectives on Emerging Data Needs and Issues

46. A summary of responses to the questions asked about emerging data needs from interviews and from the User Survey are listed in Table 2.2. The first point to take away from the summary of emerging data needs is that the data needs and issues expressed by Countries in the regional missions were almost identical to those expressed through the User Survey and, particularly, in interviews with

²⁰ 11 out of 46 (24%) comments received by users concerning emerging statistical needs focus on agro-environmental indicators, climate change and bio-energy data.

major users and partners (the NGOs, donor organizations and research institutions, which made up much of the interviews in the North America and Europe missions).

Interviews with Major Users and Partners	Results from Users Survey	Regional and Country Interviews
• Prices	• Prices	• Prices
• Energy/Bio-fuels	• Energy/Bio-fuels	• Energy/Bio-fuels
• Agro-Environmental	• Agro-Environmental	• Agro-Environmental
• Climate Change	• Climate Change	• Climate Change
• Trade	• Trade	• Trade
• Rural (sub-national) Data		• Rural (sub-national) Data
• Water		• Water
• Household Consumption, Food Security		• Household Consumption, Food Security
• Economic Accounts		• Socio-economic data
		• Land/soil (cartography & cadastre)
	• Fishery Statistics	
Technology Needs and Issues:		
• GIS, Remote Sensing	• GIS, Remote Sensing	• GIS, Remote Sensing
• Integrated Data Systems	• Integrated Data Systems	
	• Improved Search Engine	
		• Improved (full and free) Access to databases

47. The emerging data needs and issues listed in Table 2.2 are not in any ranked priority, but as is often the case, views on “emerging” data needs are largely shaped by current data needs. The emerging needs expressed most often in interviews and in the User Survey were **Prices** and **Bio-fuels** (and other non-food uses). However, there are some indications that at least the issue of prices will remain high on the world agenda for some time.²¹ Much of the discussion on prices centred on the need to have more current data/information on prices: how quickly are they rising; forecasts for future price changes; and implications for food insecurity. FAO has a wealth of information on prices in different parts of the organization. The FAO Statistical System has a country-based price collection function, but the price data collected (producer prices, trade prices, and input prices paid by producers) are for historical years. FAO's Trade and Markets Division (EST) monitors and tracks more current market price developments, often by accessing data from proprietary commercial vendors, which constrains its ability to disseminate that information further, but not its analyses. For FAO, the issue of **prices** is partly an issue of timely dissemination and ease of access, and partly the issue of using historical data for structural analysis versus use of “flash statistics” for market analysis and forecasting.

48. Many of the respondents to the question on emerging data needs and issues were interested to know whether FAO was developing a database on **Bio-fuels**, a predictable question given the recent push for using agriculture-based feedstock for producing ethanol and bio-diesel. The Evaluation Team found some bio-fuels data being collected or calculated for use in analytical studies. There is no concerted effort on the part of FAO, however, to build a bio-fuels database. **Bio-fuels** is only a small component of a much larger and complex energy issue. If additional resources are sought for this

²¹ FAO projects that real prices of major agricultural commodities will remain at high at least until 2017 (FAO, Soaring Food Prices: Facts, Perspectives, Impacts and Actions required).

activity, FAO should first clearly define its proposed role in this crowded sector, realistically establishing its comparative advantages only after thoroughly analyzing to what extent the global statistical needs are now being met by environmental NGOs, research centres, UN agencies such as IAEA and the UN economic and social commissions.

49. **Household food consumption/food intake** was highlighted as an emerging need by many of the donor organizations and research institutions, and in many of the Evaluation Team's country visits, particularly in Asia and Latin America. It is a data need that goes directly to the broader issue of food insecurity. One unit in the Statistics Division is using available household consumption survey data to develop indicators of food and nutritional intake by households, according to age, sex, level of household income, and other qualifiers. This is an exercise to develop and refine useful indicators for FAO's work in poverty, hunger, and food insecurity. If additional resources, however, are received for this activity, FAO should reach out to member countries and development partners (such as the multilateral banks and the UN economic and social commissions), since most of them have already built household survey databases which are actually being used for estimating food poverty at country and regional level. Reaching out to these partners may also allow FAO to have some input into the design of these surveys to ensure that key information and data important to food insecurity are captured.

50. Also tied to the issue of food insecurity, was an expressed need for detailed **sub-national data on rural populations and households**. This need was mentioned most often in the Evaluation Team's country visits and was seen as critical to a country's ability to assess the economic livelihood of agricultural households and to address poverty and hunger issues at the sub-national level. This emerging data need is also tied to the expressed need to make better use of geo-spatial and remote sensing technologies. However it remains to be established what comparative advantage a global organization like FAO could have in collecting or storing sub-national and household data.

51. **Agro-environment and climate change** were also highlighted by many as an emerging data need and issue. They surely are significant issues, and issues that FAO is already beginning to address with data and information available. Currently, there is no 'best' list of data needs in this area, that if achieved would allow agro-environment and climate change issues to be fully addressed. To fully address these issues requires integration of data from a wide spectrum of already complex databases. Many of these complex databases are currently unable to "talk" to each other, without further work on developing common definitions, classifications, and standards.

52. FAO has several databases on land and water, and major initiatives on forestry and fisheries resource assessments, which are important integrating variables in the agro-environment and climate change areas. Focusing on those variables allows consideration of issues that cut across the agriculture, forestry, and fishery data domains and respond to calls for monitoring implementation of the UN MDG on environmental sustainability; for monitoring the WSSD Plan of Implementation (Johannesburg, 2002) for promotion of programmes to enhance the sustainable use of land and water;²² as well as for FAO and other organizations to build national and local capacity for the sustainable management of resources.²³ More progress appears to have been made on integrating databases across the land variable than for water. In any case FAO should, as on bio-fuels, take into account that other UN actors are already working on climate change related issues (UNFCCC, UNSD and UNEP²⁴ to name a few) and, therefore, will need to reach out to those UN actors and others to mainstream its potential contribution to the monitoring of this global, complex and multi-sectoral issue.

²² Para. 38 (d)

²³ Para. 34 (d)

²⁴ A scoping paper on "Data needs for addressing Climate Change" was discussed in the UNSD/Statistics Norway Conference on Climate Change & Official Statistics held in Oslo from 14-16 April 2008.

53. **Water availability and use** is a critical integrating data set for FAO. Agriculture is one of the most significant users of water. Conflicts (within and across national boundaries) over access to and use of water will increase over the next decade, as the globe moves toward increased water scarcity. Like land, water is a critical integrating variable, cutting across agriculture, forestry, and fisheries, and essential for addressing many of the global issues such as environmental degradation, climate change, bio-diversity, and food insecurity which are part of the FAO mandate. Geo-spatial technologies have allowed a greater integration of data domains across the land variable.

54. In the opinion of the Evaluation Team, the integration of data on water, its use and availability, for agriculture, forestry and fisheries, is now **one of the weaker links** in the FAO and global data chain. Climate change, environmental degradation, bio-diversity, and even poverty and hunger are all multi-faceted global issues requiring the effective linkage and integration of several databases and geo-spatial data systems. If funding for water is to be a priority, the Evaluation Team suggests using those funds not so much for additional data collection, but for working within FAO and with other international organizations active in the area (e.g. members of UN-Water, etc.) to further develop and refine definitions, classifications, and standards that will facilitate the integration and inter-operability of the various water domains.

55. The need for more **data on trade** was mentioned by all the respondent groups listed in Table 2.2. The expressed need was not for trade data on basic commodities, which is widely available, but for more detailed agricultural and food product trade data. New food products are being introduced in the marketplace and in international trade almost on a daily basis. To undertake an effective analysis of global food and agriculture trade and the role it plays in food security, one must understand the developing trade patterns, pricing, and nutritional value of the increasing number of high-value and consumer-ready food products being produced, traded, and consumed in the global marketplace. As indicated in section II.1, other sources for trade data are available which go to the highly detailed (HS 12) product classification, compared to the more aggregated product classifications used by FAO and COMTRADE. But, these sources are proprietary and, therefore, costly.

Emerging Technologies and Data Systems for the 21st Century

56. Although agriculture is often identified as a sector that could derive great benefits from remote sensing data, it is generally accepted that this potential has not been fully realized, the fundamental cause being the lack of transition from research to operational use. Having said that, there are, however, domains within agriculture where the technology is well-defined and ready for practical use in terms of accuracy and cost-effectiveness. Grouping of agriculture land into categories can already now be done at almost 100 percent accuracy. Field condition data, e.g. growing crops, could be ascertained at 97 percent accuracy. On the other hand, problems still remain concerning crop identification, acreage estimates and water resource estimates. In these areas, satellite imagery data are used as supplements to traditional methods.

57. Users identified several current and emerging technologies that would add utility and value to data available from the FAO Statistics Programme, either by making it more accessible or by enhancing the data content. Users had high expectations for the use of geo-spatial data and remote sensing for generating sub-national data, already a possibility in some areas like forest inventory. Users also expressed the need to have more integrated data systems available and also expressed some 21st century features one might expect in a data dissemination system, such as multidimensional queries and personalized customer profiles.

The Need for Flexibility to Meet the Future Statistical Needs

58. The above discussion provides an overview of the emerging data needs as voiced by stakeholders: clients, users, and partners of FAO, through interviews and survey results. But, more important than the list of emerging issues for the relevance of the FAO Statistics Programme, is having in place a systematic and regular process for considering the priority that should be attached to such emerging needs, and then **the flexibility and agility to adapt rapidly**.

59. As resources for taking new data series on board are limited, FAO needs a mechanism by which it can not only keep abreast of emerging needs, but rapidly adjust to meet them. The emerging data needs listed in this section are the current perceived ones, as emerging from interviews and questionnaires, but the list can change very quickly as situations change, i.e. the expressed need for data on bio-fuels. FAO needs to be flexible and adjust its statistics programme as different data needs emerge.

60. FAO currently has no corporate process for setting strategic goals across the FAO Statistical System, or for adjusting priorities as conditions change. A recommendation for a mechanism by which FAO can stay abreast of changing data needs can be found in Section IV.A, while a recommendation on a strategic planning and priority setting process for FAO can be found in Section VI.A.

III. Quality and Utility of the FAO Statistical System

61. Products and services from the FAO Statistical System flow from essentially two basic functions:

- the assembly, analysis and dissemination of statistical data on world food and agriculture, including forests and fisheries; and
- the provision of advice and assistance to Member Governments to develop and improve national food and agricultural statistics and their statistics systems.

62. The data compiled is disseminated through the respective Units' databases, such as FAOSTAT, FORIS, FIGIS, AQUASTAT, etc. and through various Statistical Yearbooks, as well as through important publications such as SOFI, SOFA, SOFO, etc. and the provision of analyses on the Status and Trends of Forests, Fisheries and Aquaculture. The three main statistical units (ESS, FOIM and FIES) also provide technical services for census, survey and resource assessment activities; and for assisting Members by rehabilitating/upgrading national statistical systems and training statistical officers.

A. ASSESSMENT OF FAO STATISTICAL PRODUCTS AND TECHNICAL SERVICES

63. As indicated in the previous Chapter, users of FAO products generally found FAO statistics to be valuable for the conduct of their work and decision making. Likewise, the survey results from NSOs indicate that FAO is generally responding to their technical needs and that FAO's assistance has led to a strengthening of permanent statistical capacity. Surveys carried out in the context of other evaluations found similar results.²⁵ Beyond stakeholder perceptions, however, the Evaluation Team was interested in gauging the synergy and balance between FAO's service activities in statistical support and capacity building and the quality of the current national data collection and exchange system, as well as the quality of the data reported to FAO.

64. The Team found that the quantity and quality of data coming from national official sources has been on a steady decline since the early 1980s, particularly in Africa. Official data submissions from countries in Africa are at their lowest level since before 1961, with only one in four African countries reporting basic crop production data. The result is that FAO, in order to achieve global coverage, must estimate production data for over 70 percent of the African countries. Favourable user perceptions of the value of FAO statistics aside, the large number of FAO estimates has obvious implications for the quality of the data in the FAO Statistical System. At the country level, the Evaluation Team noticed a lack of synergy and balance between FAO's work in capacity building and

²⁵ Auto-Evaluation of FAO Activities in Technical Support Services to Member Countries and the Field Programme (2006), page 13; Auto-Evaluation, FAOSTAT (2007), pages 5 and 6.

the quality of the data submitted to FAO, where the presence of field projects on capacity building, census, etc., did not seem to have reduced the need for estimates of that country's figures.²⁶

FAO Data Quality Framework

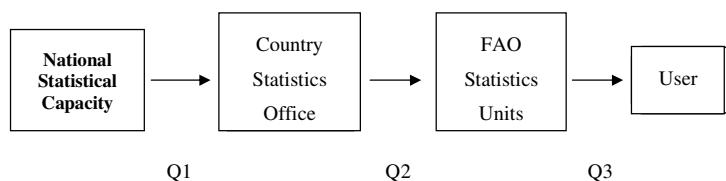
65. The FAO's quality assurance process, while varying across the three major statistical units, involves the following considerations:

- **Relevance of statistical concepts:** The basic concepts originated from traditional censuses and surveys conducted in various Member Countries and administrative records maintained in countries over the years. However, emphasis is placed on harmonizing these concepts with the concepts that are recommended (or adopted) by other international systems.
- **Comparability of statistics:** The quality of data depends partly on how well the basic ratios or averages can be estimated for making international comparisons and presenting the world and regional pictures. Where necessary, either national data are adjusted to take account of the differences in concepts over space and time, or the differences are explained and quantified by providing adequate notes.
- **Accuracy:** The accuracy of the data varies among countries. For data sets such as those maintained by FAO, there is neither any statistical measure (such as standard error) nor any reference population total with which to determine a set's accuracy. However, the internal analyses that are carried out take into account: i) the latest year for which official data are available; ii) the extent of revisions made in subsequent years; iii) the share of data that are based on official estimates; and iv) the consistency in "supply and use" identities and structural ratios (e.g. fertilizer consumption per hectare of agricultural land) for making a final judgment about the accuracy of a series.

66. In May 2004, ESS presented a paper laying out its Data Quality Framework, a framework for assessing and improving statistical activities.²⁷ The quality dimensions of the ESS Framework are similar to those of DG-Eurostat and international organizations such as the OECD and the IMF: Relevance, Accuracy, Timeliness, Clarity, Comparability, Coherence and Completeness.

67. The FAO Statistics Division's new approach to data quality evaluation and monitoring highlights three critical data quality points in the statistical process. The Evaluation Team used these three data quality points to consider the overall quality of FAO statistical products and services, and where FAO might intervene to improve its Statistics Programme.

Figure 3.1: Data Quality Points in the FAO Statistical System



68. The first quality point (Q1) in the FAO statistics quality chain is the quantity and quality of data that comes from the official national collection source and the methods used to collect the data. The second quality point (Q2) is the completion of annual questionnaires by the country's statistical

²⁶ The Evaluation Team found that FAO field projects in countries such as China, Vietnam and Peru, while strengthening statistical capacity and statistical collection methods, did not directly lead to an improvement in the quality of the data submitted to FAO.

²⁷ *FAO Statistical Data Quality Framework: A multi-layered approach to monitoring and assessment*, Paper presented to the Committee for the Coordination of Statistical Activities, Conference on Data Quality for International Organizations, May 27-28, 2004.

reporting office and transmission to FAO. The third quality point (Q3) is what FAO does to the data (editing, correcting, revising, and imputing of data) before it is released to users.

69. Building country statistical capacity can improve quality at point Q1. Interaction and feedback between countries and FAO can improve quality at point Q2. Data validation and editing at the country level and a corporate statistical quality framework can improve the quality at point Q3.

70. The Evaluation Team found that the FAO Statistics Programme is rife with quality issues at all three of these quality points, from the quality of the collection methods, to the quality of the data as it comes to FAO from the national source, to the quality of the FAO data as it reaches the user.

B. QUALITY OF COUNTRY STATISTICAL CAPACITY (Q1)

Viewed from the 21st Century FAO Statistical System: “FAO has **reversed the declining trend** in Member Countries’ ability to **collect and report** basic agricultural statistics.”

71. In 2000, ESS established the Agricultural Bulletin Board on Data Collection, Dissemination and Quality of Statistics (ABCDQ) project to reinforce the quality of FAOSTAT.²⁸ For each country, metadata on data collection and dissemination are provided, such as organizations and contacts, sources of information (total census, sample survey, administrative record or others), method of data collection, data specifications, data coverage, mixed cropping, comments, dissemination format, periodicity, timeliness and lapse time of data published. This provides FAOSTAT users with an overall quality quotient for data coming from a particular country, allowing the user to gauge the overall quality of the data. More important for the quality of the FAO statistical system, however, are the countries who do not report official data to FAO.

72. Ensuring the quality of the data in FAO statistical products has been a major challenge because the availability of reliable data can vary greatly among countries and even within countries. In 1997, an ESS paper estimated that only 16 out of 54 countries in Africa had reliable basic statistics (for crops and livestock). Similarly, a review of FAOSTAT in 2001 indicated that 30 countries worldwide lacked relevant statistics for five or even ten years.²⁹ In FAOSTAT, missing official or semi-official data must be estimated through various available techniques. The continuing problem of low data quality is a major concern for FAO, which needs to have comprehensive and reliable data coverage.

73. Based on current data from ESS, the Evaluation Team found that submissions of official production data and official trade data from countries in Africa are at their lowest level since before 1961, at 26 percent and 66 percent respectively (Figures 3.2 and 3.3). Submissions of production data from countries in Asia Pacific, Latin America and the Caribbean have also been on the decline over the last 10 years.

²⁸ Quality is interpreted (as noted above) by criteria relating to: i) the relevance of statistical concepts; ii) the accuracy of estimates; iii) the timeliness and punctuality in disseminating results; iv) the accessibility and clarity of information; v) the comparability of statistics; and vi) coherence.

²⁹ Evaluation of Programme 2.2.2 (Food and Agriculture Information). Activities related to agricultural statistics, May 2003, page 13, para. 32.

Figure 3.2: Crop Production Data for Africa

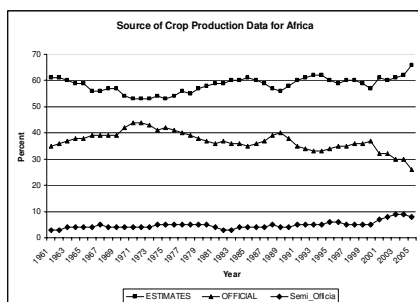
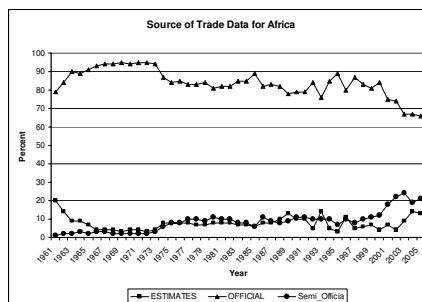


Figure 3.3: Trade Data for Africa



74. The share of official figures on forest products such as fuel wood, sawn wood, plywood and case making materials have also declined since the early 2000s. Other issues also influence the timeliness and the degree of completeness of questionnaires, including the transmittal of the questionnaires to inappropriate offices and/or Ministries. But the underlying trend in countries' inability to report basic statistics must be directly tied to a lack of institutional capacity to do so. This has inevitable major consequences for the quality of data found in the FAO global statistical system.

75. The Evaluation Team concluded that the current situation is a reflection of a few inter-related circumstances:

- the **lack of country capacity** to collect basic data on agriculture following a period of deterioration in overall national statistical capacity;
- the **low priority** given in the past by FAO to work with countries in improving the quantity and quality of their data submissions; and
- a **limited field presence** (both at country and regional level) and poor networking with member countries and partners to keep FAO and the countries and partners themselves abreast of recent developments.

Quality and Utility of FAO's Technical Services

76. FAO has a long experience in providing statistical support to developing countries. In the NSO Survey those countries expressing a need for statistical support and assistance were asked to identify whether FAO or other organizations had or are now providing assistance for statistical capacity building.³⁰ The responses are detailed in Table 3.1. One-quarter of the countries indicating a need for statistical support of Agriculture and Livestock Surveys said FAO was responding, either alone or with others. Just under one-third of the respondents indicated that FAO was involved (either alone or with others) in providing assistance for Agricultural Census and Survey activities. FAO involvement with support for Forestry and Fishery statistical programmes were somewhat less at 16 percent and 20 percent respectively.³¹ The response from the NSOs does indicate that FAO continues to be responsive to Member Country needs. Perhaps not as responsive as it was 10 or more years ago.

³⁰ The response categories were: FAO alone, FAO with others, others alone, no assistance provided.

³¹ The lower response for forestry and fisheries capacity building is not to be interpreted as indicating that FAO is less responsive to Member needs in these two areas. First, the Forestry and Fishery statistical capacity building programmes are much smaller than that of ESS and therefore can not be compared on a one-to-one basis. Second, most of the Fishery and Forestry statistical activity is with respective country Ministries, not with its NSO. Therefore, responses on forestry and fishery activities from the NSOs were dependent on their broader understanding of capacity building activities outside their sphere of responsibility.

but responsive nonetheless. Results from previous Evaluations³² confirm the decline in FAO's in-house statistical support capacity.

Where needed, assistance is provided by FAO (alone or with others) in:	Share of cases
Agricultural Census and Surveys	31%
Agriculture and Livestock Statistics Capacity Building	25%
Fisheries Statistics Capacity Building	20%
Forestry Statistics Capacity Building	16%

77. A third question in the Survey to NSOs asked how good a job did FAO do in providing technical support and assistance for statistical capacity, and did it lead to a strengthening of permanent capacity in the particular areas/categories of need (Table 3.2). Overall, FAO received relatively high marks for the quality of service and technical assistance, with 80 percent of responses indicating that FAO's work resulted in strengthening of permanent capacity in Agriculture and Livestock statistical capacity, and 87 percent responding that FAO's contribution did result in significant strengthening of Agriculture Census and Survey capacity in Member Countries. This finding is supported by results from the Auto-Evaluation of the ESS/Field Programme.³³

Has FAO contributed to strengthening permanent capacity in these areas:	Share of countries responding "A lot / Very much"
Agricultural Census and Surveys	87%
Agriculture and Livestock Statistics Capacity Building	80%
Forestry Statistics Capacity Building	63%
Fisheries Statistics Capacity Building	50%

78. Overall, despite the reduced capacity within FAO for providing statistical support to Member Countries, FAO is still seen as responsive to Member Country needs.³⁴ And when FAO does respond, they inevitably leave behind a strengthened statistical capacity.

Qualitative Assessment of Field Activities

79. The assessment of field activities is based on the judgements made by evaluation missions to 15 projects (10 TCPs and 5 trust funds) in nine countries, plus desk studies of an additional five projects in Africa and Asia. Thus, the evaluation covered 20 field interventions, out of a total of 91 projects implemented during the review period by ESS, FOIM and FIES. In addition, the questionnaire

³² Independent External Evaluation of FAO, page 108; Auto-Evaluation of FAO Activities in Technical Support Services to Member Countries and the Field Programme (PE 222S1), page 7.

³³ Auto-Evaluation of FAO Activities in Technical Support Services to Member Countries and the Field Programme (PE 222S1), page 11.

³⁴ Auto-Evaluation of FAO Activities in Technical Support Services to Member Countries and the Field Programme (PE 222S1) indicates that on average over the three biennium 2000/01 thru 2004/05, there were 20 – 30 field projects underway, but with funding levels much reduced from the 1980s, page 11.

survey to NSOs also requested information about FAO technical assistance, particularly for the development of: i) methodologies for census and surveys; ii) CountrySTAT; and iii) long-term policy analysis and assistance.

80. As has been the case in other recent thematic evaluations, the **relevance** of projects to development problems was found to be high, while the translation of this into clear objectives and an implementable design was found to be generally good.

81. Effectiveness, on the other hand, was deemed to be only satisfactory, which is, to some degree, a design-related issue, since in some cases projects had over ambitious goals that could not be met in the relatively short period allocated e.g. to carry out complex undertakings such as the implementation of agricultural censuses (see box below).

Box 3.1: FAO Support to the Agricultural Census in Niger

The EC funded "Recensement Général de l'Agriculture et du Cheptel" (RGAC) project in Niger started in 2004 and aimed at: i) collecting and putting at the decision makers' disposal a valid set of statistics on agriculture and livestock to inform the National Strategy for Rural Development (SDR); ii) reinforcing the capacity of the national statistical system and putting in place a renewed Permanent System for Agricultural Statistics; iii) making the data collected in rural areas available in an electronic format.

Under the aegis of the National Ministries for Rural Development and Livestock Resources and with support from the National Institute of Statistics, the census was operationalized in 700 (out of 8,000) census enumeration areas and proceeded with an exhaustive numbering of nomadic and transhumant livestock resources, which had never been comprehensively counted before. The work carried out with the support of FAO was highly valued not only in terms of quantity and quality of information collected, but also with relation to methodological improvements. The new flexible modular approach to census taking recommended by FAO was implemented for the first time with core structural data and thematic modules (productivity of livestock, estimates of pasture availability, farmers' organisations, food security, etc.) making the results more responsive to user needs. This Euro 6.4 million project also contributed to the renewal and up-grading of the EPER (Enquête de Prévision et d'Evaluation des Récoltes) system, by up-dating the sampling frame and revising the methodology and logistics.

An internal EC project review (2006), however, pointed out that the project goals were probably too ambitious for the initial time frame of three years (NTE, June 2007); it further said that "despite having postponed the NTE by one year to June 2008, the project mainly focused on the census only, without devoting adequate attention to the two other goals set". For the last two years, this weakness was partly addressed by integrating the activities of the project within the regular and current activities of the National Directorate of Agricultural Statistics and the National Directorate of Livestock Statistics. FAO and the country are now embarked in negotiations with other donors (e.g. Spain) to support the Permanent System for Agricultural Statistics (SPSA in French) in order to address some of the shortfalls after the project official closure, and address the challenges of sustainability of the RGAC.

82. Based on the findings of regional missions and the projects desk review, the evaluation team considered the efficiency of project performance to be high. This seems to be more true for recent interventions (e.g. census work in the Caribbean), as 50% of the NSOs that answered the survey instrument reported that "quality (= performance) of technical assistance has increased in the last five years".

83. The questionnaire to NSOs also asked for information about satisfaction with FAO technical assistance activities, with the possibility to supplement the general answers with more detailed information if desired. Countries were asked to indicate their familiarity with the technical assistance FAO offers in statistics for the development of: i) methodologies for census and surveys; ii) CountrySTAT; and iii) long-term policy analysis and assistance; and provide an overall rating of the quality of FAO's work. The results for the two regions where a greater need for support was identified by the evaluation team (Africa and Developing Asia; see Section II.A) show that over 80 percent and 70 percent of the respondents familiar with it were satisfied with the quality of FAO's technical assistance, respectively.

Figure 3.4: Satisfaction with FAO Technical Assistance Activities in Africa

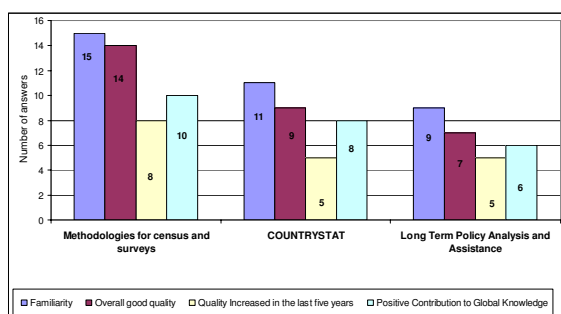
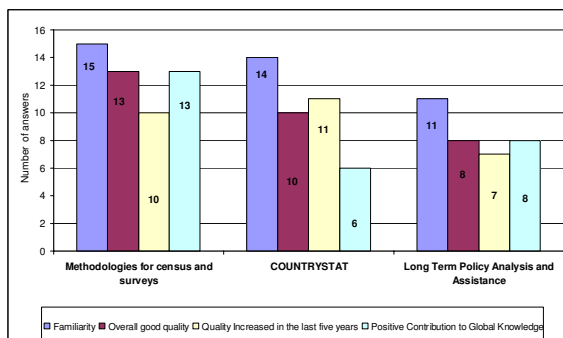


Figure 3.5: Satisfaction with FAO Technical Assistance Activities in Asia



84. The evaluation team found that the **impact** and the **sustainability** of FAO technical assistance varied greatly from country to country, with impact being greater where direct country assistance was provided,³⁵ while sustainability had a strong correlation with the quality of project design (see discussion on TCP Mechanism below). Over 66 percent of the NSO respondents that were familiar with FAO’s technical assistance considered FAO’s contribution to *global knowledge* as being “important”, in itself an indicator of positive impact. Of these 78 percent were about the development of methodologies for census and surveys.

Appropriateness of the TCP Mechanism for Funding Capacity Building

85. FAO’s main internal technical assistance instrument is the Technical Cooperation Programme (TCP) funding mechanism. These TCP projects have certain constraints in terms of project duration (maximum 3-year duration since 2007; before that, maximum 2 years) and total project funding (US\$500,000 since 2007; before that, US\$ 400,000). An original concern to the Evaluation Team was whether or not these project duration and funding limits precluded TCP projects from being useful

³⁵ Positive impact was reported in China, Saint Lucia and Barbados (enhanced staff capacity for census work); Vietnam (improved staff skills for food security monitoring and analysis); and Niger (greatly strengthened Agriculture Statistics and Livestock Statistics Services) as a result of direct country assistance.

statistical capacity building funding mechanisms. The IEE similarly identified TCPs as poorly suited for funding statistical capacity building projects.³⁶

86. In reviewing TCP projects on capacity building during the Evaluation Team's country visits, and in getting an understanding of how in-country capacity building projects are handled, a clearer picture emerges of the important role that TCP funded efforts play in overall capacity building efforts. FAO develops a TCP project for capacity building (say, undertaking an agricultural census) with the country. But staff from ESS will not implement the TCP until the country has found a donor to support the census undertaking. In this way, the small TCP is used as seed money to attract donor support. As well, the donors like to see that FAO has committed to provide guidance and support for the census. So, when the expected new funding regulations relax the time and funding level constraints for TCP, the TCP should become an even better technical assistance funding instrument, at least as a resource mobilization tool for this type of intervention.

87. The 2006 Auto-Evaluation of FAO Activities in Technical Support Services (Programme Entities 222S1 and 222A2) noted that there was little follow-up after completion of field projects which, in some instances, put the long run sustainability of capacity building projects at risk. Given the longer gestation periods associated with capacity building efforts, such as an agricultural census, this is one instance where the project duration limit of TCP could have come into play. The auto-evaluation also found that sustainability of project results remains an important issue in many countries. As was discussed above, this issue should be addressed before the TCP is initiated.

88. The 2006 Auto-Evaluation also showed that between 20 and 30 projects were formulated and implemented during each biennium with an average budget of US\$ 350,000 to US\$ 450,000 per project as compared to an average of more than US\$ 1 million in the 1980's. The average duration of a project was about 18 months. The analysis also concluded that there were a larger number of smaller and shorter projects now, than in the 1980's. Therefore, the technical assistance was mainly provided through short missions of ESS staff and consultants, as opposed to longer term expert missions as was the case in the 1980's.

89. Other conclusions highlighted by the Auto-Evaluation and supported by the Evaluation Team's regional missions are listed below:

- Advice and assistance through field projects was generally of high quality, with some countries expressing a preference for working with FAO as opposed to other donor/partners.
- Training for the analysis and efficient use of statistical information should be part of the statistical capacity building programme.
- Past censuses were often designed and implemented as stand alone operations, not linked to current data production systems.
- Regional Statistical Commission meetings provide good venues for exchange of information and experiences.

90. It was also stressed that ESS had been responsive when dealing with country needs, adapting to changes in environment, as well as managing to mobilize external funds. Direct assistance, through field projects, was generally of high quality and comprehensive. Overall, the auto-evaluation noted a general improvement in the results of assistance in statistics at country level.³⁷

91. The auto-evaluation noted that FAO past assistance to NSOs remained mainly concentrated on traditional areas of agricultural statistics and that a more comprehensive coverage and an integrated approach are needed to deal with emerging issues and data needs. Here, the Evaluation Team would like to propose some caution. With limited and dwindling resources, and significant remaining quality gaps in traditional areas of national agricultural statistical systems, it is not sound policy to dilute the resources even more on new capacity building areas.

³⁶ Independent External Evaluation of FAO, para. 402.

³⁷ Auto-Evaluation of FAO Activities in Technical Support Services to Member Countries and the Field Programme (PE 222S1).

92. Conclusion: Although resources have diminished, field activities undertaken by ESS are highly valued by countries and play an important role in FAO's statistical capacity building programme. With the proposed new work organization in ESS with regional teams responsible for both capacity building and data collection (see Section VI.E), with the objective of giving greater "ownership" and responsibility of quality control to countries, the efforts in capacity building must be significantly strengthened.

FAO's Comparative Advantage Remains

93. The FAO's comparative advantage is based on its long experience in food and agriculture statistics, its work in statistical collection methodologies for agriculture, and its strong record of building statistical capacity in countries. The IEE Report seemed to question whether or not FAO still maintained its comparative advantage in capacity building. FAO, the IEE says, "was once the leader in the provision of capacity building assistance to countries for agricultural statistics, but this is no longer the case."³⁸ The evaluation team found that through their recent work in Niger, Saint Lucia, China and other countries, FAO continues to have the skills and expertise to lead in the development of statistical capacity building, but just does not have enough in-house resources to do it. Participants in the Auto-Evaluation of ESS's Field Programme commented that the quality of consultants used by FAO in field projects had a significant impact on the quality of the services provided.³⁹ The respondents recommended that FAO should be more selective in the recruitment of consultants and experts in its field programmes. One of the recommendations coming out of the auto-evaluation was that "technical briefing and training/up-dating of these experts and consultants on new tools and approaches be included in the programme of ESS."⁴⁰ The Evaluation Team supports this recommendation.

94. The fact that FAO does not now have the statistical capacity building response in countries that it had in the 1980s is indeed more a function of quantity than of the quality of FAO's expertise, skills, and abilities. Resource and capacity limitations have affected the ability of FAO to develop new methods and techniques for use in national statistical systems, as well as the provision of direct support to member countries.

95. The IEE did highlight that, "*FAO's influence on policy for statistics is much diminished. Particularly in the 1970s, FAO statisticians made important contributions to statistical science. At that time FAO was the acknowledged leader in the development of survey methodology for agricultural production....*"⁴¹ The most recent Statistical Development Series publication released by ESS was a two-volume series on "Multiple Frame Agricultural Surveys," published in 1998 (Volume 2).⁴² The multiple frame methods publication(s) was a comprehensive introduction for conducting area and multiple frame probability sample survey programs, with a special emphasis on methods and best practices applicable in developing countries. For fisheries, statistical methods handbooks and guidelines were released as recently as 2005.⁴³

96. While FAO, in its more recent work in Niger and elsewhere, is using cutting-edge methods for sampling frame design (use of remote sensing, for example), the low level of resources in ESS does not permit translation of those techniques and new methods into training and statistical methods publications. The demand for implementation trumps publication and dissemination of these

³⁸ Independent External Evaluation of FAO, page 108, para. 402.

³⁹ Auto-Evaluation of FAO Activities in Technical Support Services to Member Countries and the Field Programme (PE 222S1), page 12

⁴⁰ Ibid. Page 15, recommendation 5.

⁴¹ Independent External Evaluation of FAO, page 108, para. 406.

⁴² Multiple Frame Agricultural Surveys: Volume 2 – Agricultural Survey Programmes Based on Area Frame Or Dual Frame (Area and List) Sample Designs, FAO Statistical Development Series No. 10, 1998.

⁴³ Guidelines for designing data collection and sharing systems for co-managed fisheries, FAO Fisheries Technical Paper 494, Parts 1 and 2, 2005.

methodological developments, which are necessary complements to field activities and capacity building.

97. The Team also found that the current high expectations from countries and partners for agricultural statistics capacity building can not currently be matched by current FAO resources, despite donor pledges of financial support. This situation has now reached a point where key activities are on the verge of collapse without a significant re-direction of resources.

Country Agricultural Statistics Capacity: Building Back Better

98. On the basis of the above assessments and the results of interviews and surveys, the Evaluation Team has concluded that the **most pressing “emerging” data need is actually a “re-emerging” need** to improve the capacity for collection and dissemination of country data of member countries in order to make available the best analytic and decision support tools, with priority on the poorest countries, particularly those in Africa. While no exact numbers exist to compare the quality of statistical collection in the 1970s and 1980s with that of today, there is extensive anecdotal evidence that national statistical capacity, particularly for agricultural statistics, has deteriorated, as a result of dismantling of public institutions under structural adjustment and a lack of donor interest in conserving statistics capacity, with a consequent decline in priority and resources at the national level. Many countries in Africa no longer have capacity to collect even the most basic production statistics, although that capacity existed in the 1970s. Much of the good work FAO did in the 1970s to institutionalize national statistical capacity (e.g. collection, analysis, and dissemination) has been irreversibly lost. Many of the more recent TCP Capacity Building projects now carry the title: “Rehabilitating the Statistical Capacity....” For many countries, like those in Africa and some in Asia and the Caribbean, building statistical capacity must begin anew. There is little or no foundation on which to build. This will require marshalling the multi-disciplinary and diverse resources of FAO to be brought to bear on this systemic “quality” issue.

99. **Conclusion:** The deterioration in countries’ statistical capacity is by far the most significant of the three critical quality points in the FAO Statistical System. An urgent shift in priorities is required by FAO and its collaborative partners, in order to improve statistical capacity at its source.

100. **Recommendation 3.1:** Re-direct FAO resources towards a **renewed commitment to improving national statistical capacity** for agriculture, forestry, and fisheries and the expanded development of “best practices” for building statistical capacity in member countries.

101. A non-conditional initial activity should be the development of a capacity building strategy that diagnoses the relative size, **urgency** and type of country needs and demands. Some countries, for example, will need a major and long term commitment from FAO and its partners in order to improve their statistical systems. Others will need more modest levels of technical assistance. The Strategies already adopted by FAO Members for the improvement of information on status and trends of fisheries (adopted by FAO and endorsed by the UNGA in 2003) and aquaculture (adopted in 2007) are examples of an integrated approach to capacity building . This strategy will also provide FAO with evidence-based indicators and targets to include in the proposed New Programme Model for the Organization.

102. **Conclusion:** The evaluation shares the view of the IEE that “capacity building must be delivered as an integrated whole bringing together technical cooperation, access to knowledge, experience and decision-making, with FAO both as a facilitator and provider.” and strongly recommends the development of “a capacity-building strategy” as a first step for improving national capacity. The creation of regional teams in ESS and an increased role of Regional and Country Offices in the FAO’s Statistical System will be key elements for the successful undertaking of such a review.

103. **Recommendation 3.2:** FAO should pursue the **development of an integrated capacity building strategy** for agriculture, forestry, and fisheries that diagnoses the relative size, urgency and type of country needs and **demands** with respect to statistical capacity building.

C. QUALITY OF DATA COMING FROM THE NATIONAL SOURCE (Q2)

Viewed from the 21st Century FAO Statistical System: (1) FAO **provides training, guidance and assistance** to national staff to ensure complete and full reporting of statistics based on an **understood common set of definitions, standards, and classifications**; (2) **Data validation and quality control** takes place at the country level, as member countries institutionalize statistical capacity and increasingly take ownership of their data and data systems.”; and (3) “FAO manages **electronic data reporting through automatic web capture of data** (harvesting of data) where feasible, as it is from an increasing number of Member Countries.”

104. The Evaluation Team during its regional missions reviewed the results of recent capacity building activities and attempted to link improved statistical collection capacity with the quality of the data submissions from the country. The link proved elusive, largely because of confusion and misunderstanding on the part of those persons in the countries completing the questionnaires, but also because of a weak integration of FAO technical assistance with census work (the bulk of country assistance) and the current agriculture data collection programme in countries.

105. Participants in the ESS’s Field Programme Auto Evaluation in 2006 noted that “*past censuses were often designed and implemented as stand-alone operations, not linked to current data production systems despite FAO recommendations in past programs which implied that the Census of Agriculture should be part of an integrated programme.*”⁴⁴ Participants agreed, however, that the new programme for the World Programme for Census of Agriculture 2010 developed by ESS “*would address this issue to a large extent.*”⁴⁵ The participants recommended that “*assistance to censuses of agriculture systematically include follow-up to current agriculture surveys and permanent systems in the form of an integrated survey and census programme with attention paid to reconciling census data with current time series before and after the census in order to minimise conflicting data.*”⁴⁶

106. In the country visits, the Team was told repeatedly that those statisticians who completed the FAO questionnaires did not fully understand the specific data request, or the standards and/or units by which the data should be reported. It was clear that little or no training had been provided for some time. The concern was across the board - agriculture, livestock, forestry, and fisheries. When country statisticians were unsure about how to fill in the questionnaire, it was left blank, even though data were available. Discussions with Headquarter staff and findings from the Fisheries and Forestry specific reviews support this finding. Previous Evaluations have also highlighted this problem; the 2006 Auto-Evaluation of FAO Activities in Technical Support Services states: “*Communication between ESS and national offices of agriculture statistics seems to be below expectations ESS should therefore make efforts to improve communication and linkages.*”

107. **Conclusion:** For those countries that do continue to report annual statistics to FAO, a lack of knowledge or understanding of the FAO questionnaire and/or its underlying standards, classifications, and units, limits any enhanced statistical capacity from directly influencing the quality of the data transmitted to FAO.

108. **Recommendation 3.3:** FAO should work to improve the quality of country submissions for agriculture, forestry, and fisheries by enhanced training, dialogue and feedback with reporting countries on the questionnaires for production and for trade, and on definitions, classifications and standards for reporting.

⁴⁴ This was the case for FAO’s assistance to China for its 1st agricultural census. There was little or no effort to reconciling census data with current time series before and after the census. The institution for reporting “official” agricultural statistics is different than the Organization responsible for conducting the agricultural census. This problem persisted through China’s 2nd Agricultural Census, just recently completed, but without formal assistance from FAO.

⁴⁵ Auto-Evaluation of FAO Activities in Technical Support Services to Member Countries and the Field Programme (PE 222S1), page 11.

⁴⁶ Ibid. recommendation 2, page 2.

CountrySTAT and the Reinforcement of Quality of Data from the National Source

109. The proposed re-orientation of FAO statistical resources towards a renewed effort in capacity building (see Recommendation 3.1), combined with assistance in questionnaire compilation and reporting to FAO (see Recommendation 3.3), could be further reinforced with the implementation of FAO's CountrySTAT. These three pillars – (i) a renewed effort in capacity building; (ii) providing assistance with reporting; and (iii) implementation of CountrySTAT to build country capacity in data compilation and exchange – form the core of a re-orientation of FAO statistical resources aimed at assisting national statistical agencies in taking greater responsibility for their data. With assistance of FAO, CountrySTAT will facilitate improved data quality closer to the source, as well as facilitating transmission of the data to the FAO. It provides statistical standards, methods and tools for two-way data exchange and provides data validation capabilities for countries. If countries so wish they can also expand CountrySTAT to become a statistical information system for food and agriculture statistics in order to facilitate data use by national policy decision makers and researchers, compiling national Food Balance Sheets and Supply-Utilisation Accounts.

110. The underlying information technology for CountrySTAT is based on, but not limited to, a software suite called the PC-Axis software family. This software suite has been developed and is in use by five Nordic countries plus 21 other national and international statistical offices around the world. CountrySTAT has applied and enriched the software suite with its statistical framework for the food and agriculture domain and adapted it to the needs of developing countries. The users of this information technology compose the PC-Axis reference group, which has a worldwide support and feedback mechanism in addition to its annual meetings. PC-Axis software is open for further development and affordable, especially for developing countries.

111. FAO CountrySTAT has carried out three feasibility studies in 2005 in partnership with the National Statistical Committee of Kyrgyzstan, the Central Bureau of Statistics of Kenya and the Ghana Statistical Services. FAO has trained over 30 country experts and has launched CountrySTAT projects with 15 national statistical offices. Over the long-term this initiative could become the main component underlying the transfer and exchange of data within the FAOSTAT. The system could also be replicated for forestry and fishery data transmission if desired.

112. The Evaluation Team was aware of other systems developed, or being developed, for use by countries to compile, store and exchange data. The Team interviewed staff from two of those systems, UNICEF's DEVInfo, and WHO's Health Matrix. The DEVInfo system is functioning in many countries (e.g. Peru, Vietnam, Niger, etc.), largely as a tool for compiling development statistics for the monitoring of MDG indicators. WHO's Health Matrix is still in the development stage. In addition, the Team's missions found cases where the country itself, Thailand, for example, is developing their own central platform for compiling, storing and exchanging data across the national government.

113. CountrySTAT, although with a prime focus on agriculture, is thus one of many systems that could potentially be used to house a principal data system and exchange data within and between countries, the main distinguishing characteristic being its seamless integration with FAOSTAT (to which all countries have to report). The system has yet to be rolled out in a massive way. CountrySTAT is currently in some stage of use in 15 countries and just beginning to be implemented in a further 17 African countries under a trust fund project funded by the Bill and Melinda Gates Foundation. So real or imagined conflicts with other systems have not occurred. CountrySTAT is being implemented, mostly in Ministries of Agriculture, as a tool for sustaining data collection and transmission to FAO, not as tool for processing and housing the country's national agricultural database, although a country may choose that path over the longer term.⁴⁷

114. **Conclusion:** CountrySTAT holds potential to raise the capacity at the national and regional levels to collect, analyse and disseminate food and agricultural statistics, including geo-spatial data,

⁴⁷ Some countries, like the Philippines or Bhutan, have taken this approach.

and at the same time increase national ownership of the data. Within two years, 17 Sub-Saharan African countries will be benefiting from this initiative. In the medium term, the initiative has the potential to spread rapidly across all regions as CountrySTAT becomes the “sustainability” element in FAO’s renewed statistical capacity building programme. With the emphasis on strengthening national capacities and national ownership, countries will be empowered through a better understanding of their agricultural sector and the issues related to food security and rural development.

115. **Recommendation 3.4:** The pace of CountrySTAT implementation should be accelerated as resources allow, but based on the increased efficiency and the improved quality of country submissions for direct reporting of validated, edited data to FAO.

D. QUALITY OF DATA AS IT REACHES THE USER (Q3)

Viewed from the 21st Century FAO Statistical System: (1) “FAO has regular communication and consultation with National Statistical Offices and other national reporting organizations (Ministries of Agriculture, Forestry, Fisheries, Commerce, etc.), providing a mechanism for critique and feedback on the FAO Statistical System”. (2) “An **FAO Statistical Quality Framework**, similar to those of other international organizations, is in place and its principles **adhered to and monitored** by all parts of the FAO Statistical System.”

116. There is **no corporate quality framework** for statistics in FAO. ESS has a reference and a link on its Website to the *Principles of Good Practice for International Statistical Activities*, **adopted** by the UNSC.⁴⁸ Examples of “Good Practices” under the Guidelines include:

- having regular consultations with key users both inside and outside the relevant organization to ascertain that needs are met;
- periodic review of statistical programmes to ensure their relevance;
- providing equal access to statistics for all users;
- documenting how data are collected, processed and disseminated, including information about editing applied to country data; and
- facilitating the provision of data by countries.

117. A review of the “Good Practices” listed above alongside known ESS practice (i.e. little or no consultation with countries; no major peer review of the Statistics Programme; bulk users charged a fee for access to FAOSTAT; no consultation on edits or estimates made by FAO to country data; and little facilitation of country submission of data to FAO), begs the question of how strongly ESS, or any FAO statistical unit, abides by these principles. Another Resolution adopted by the UN Economic and Social Committee in 2006 on Strengthening Statistical Capacity, discusses the practice of data imputation, when and under what guidelines should statistical organizations impute country data. The approach to imputation of data in the old FAOSTAT and in the new FAOSTAT (“FAOSTAT-2”) runs contrary to the rather strict resolution guidelines which suggest that imputation be used only if based on other official data sources, such as mirror statistics for trade. Imputation is also used to fill in gaps in some Forestry statistics (production) and fisheries statistics (production and trade). In other areas, such as the forest resource assessment, imputing missing or unreported data is not practiced at the country level.

118. It is well-known to both internal and external users, and, of course, to the FAO statisticians, that the FAO data are, to a large extent, imputed or estimated, because no data have been reported by countries, or that the reported data for important groups of countries, such as the LIFDCs, a main focus for FAO’s poverty and hunger alleviation effort, are of very low quality. In Forestry, since the year 2000, almost two thirds of the country statistics for fuel wood were estimates by FAO; over 50 percent of the country estimates for plywood were made by FAO; and for other paper and paperboard, FAO made estimates for nearly 95 percent of the countries.

119. The issue is not that FAO must make estimates for a large number of countries. The issue is how those estimates are made and the transparency behind those estimates. Prior to the substantial

⁴⁸ www.faostat.fao.org

decline in staff, ESS maintained a very human-intensive process for validating, editing, and revising or estimating data from country submissions. Staff in ESS had a thorough understanding of country statistical systems, knew the country statisticians, and often worked with country statisticians to fill in data gaps from secondary sources or by other means, to arrive at the “best estimate.” With the loss of staff and expertise, the approach, methods, and/or the source behind the “best estimates” became less transparent.

120. In addition, as the Evaluation Team learned from its regional missions, FAO stopped discussing revised or estimated data with country contacts. Several countries reported that they never received any feedback from FAO on their annual questionnaire submissions, even when some responses were left blank. Others reported not receiving any feedback, but when FAO released the new-year statistics, not being able to recognize the original data submitted, or in several instances finding reported data for production of a particular product for which the country had no data, official or unofficial. Such a lapse in communication and feedback with country statistical offices is also highlighted in several previous evaluations.⁴⁹

121. Concern was expressed about the state of the quality of statistics through the survey of users, NSOs and during the interviews with country and regional organizations. However, in some interviews that the Evaluation Team undertook, some other users took a more pragmatic view saying “Yes, the figures are bad, but they are the only ones we have”, this being particular true for certain regional aggregates to be used for arriving at world totals.

122. One of the main objectives with FAOSTAT-2 was to create a core with complete data sets for all countries, but for a much smaller list of primary commodities, through the use of advanced automated estimation techniques. The fact that it was to be a tool for automatically validating, estimating and generating data implied that fewer and fewer staff resources were envisaged to be necessary – a rationale which was certainly important in light of diminished resources and the continuous staff reductions that ESS had experienced. However, the very liberal approach taken to imputation and providing “FAO estimates” under the FAOSTAT-2 project raised a fundamental question about the statistics that FAO should be publishing: Should FAO simply transmit (with minimal ‘cleaning’) the official data from country submissions, with all their weaknesses and blanks, or should it instead, as an expert scientific organization, provide statistics representing FAO’s best estimate of the data? The answer, in the view of this Evaluation, is “both,” but imperatively with very clear indications and explanations of which figure is which.

123. **Conclusion:** FAO, in the context of a Statistical Quality Framework, must draw a much clearer distinction between “Official” data from countries and fully explained “FAO Estimates” for countries. Without an explicit corporate policy, there is little or no control on the overall quality or the transparency of data as it gets to the user.

⁴⁹ Auto-Evaluation of FAO Activities in Technical Support Services to Member Countries and the Field Programme (PE 222S1), page 11; Evaluation of Programme 2.2.2 (Food and Agriculture Information) Activities related to agricultural statistics, May 2003.

Box 3.2: FAOSTAT-2

The New FAOSTAT working system (FAOSTAT-2)

FAOSTAT was first implemented in 1992, and it quickly established itself as a reference in agriculture statistics and a flagship product for FAO. By 2000, many of the software versions on which FAOSTAT was based were outdated and presented technical limitations that threatened the stability of the system. In 2001, the FAO Programme Committee endorsed a project proposal for the modernization of the FAOSTAT working system (herein also referred to as "FAOSTAT-2"). In July 2002, the WAICENT committee gave FAOSTAT-2 full project status, with a funding of US\$ 2.8 million made available in July 2003 from arrears.

The project proposal stressed that **user requirements** should be the first pillar underpinning the project. The section on Management of Potential Risks highlighted as a major risk that *"system developers may not understand the needs of FAOSTAT users, leading to poor system design, cost overruns and missed deadlines."* A second pillar stressed was the improvement of data quality through rigorous editing and consistency checks. A third pillar concerned statistical methodologies, norms and standards, in particular the taking on board standard international classifications.

From the extensive interviews and visits undertaken by the Evaluation Team, it emerges that at no point in time did the project actively involve outside users, and internal users from FAO substantive units were only allowed (by project management) to participate in a weak advisory role. The thematic study under this evaluation as well as other reviews (including an internal audit of FAOSTAT-2) concluded that this issue and that of transparency and communication were very poorly handled by Senior Management during the entire life of the project. The project's performance suffered from inadequate governance arrangements. Given the centrality of FAOSTAT to FAO and the level at which governance was to take place, this cannot be considered just a failure in project management. Rather, it was a **corporate failure** with major implications for internal (FAO) and external stakeholders alike.

The way forward and what to do with FAOSTAT-2

Following escalating external and internal complaints, FAOSTAT-2 was taken off-line in late 2007 and a decision was taken to revert back to the "old FAOSTAT," despite constraints concerning hardware, software and maintenance. The prime objective was to get the two most important databases, production and trade, updated and operational according to previous methodology in order to satisfy the urgent needs of internal and external users. By May 2008, it would include 2005 data and some data series of 2006 and 2007, with the aim to have the full set of 2006 data by the end of 2008.

It is clear, however, that this is a temporary solution which is not viable in the long run for technical and methodological reasons. Over the coming months, a decision on a more permanent solution must be made. Parallel with the re-implementation of the old FAOSTAT, a new corporate system ("FAOSTAT-3") must be developed under the leadership of the **Chief Statistician** (see recommendation 6.3). For now most of the FAOSTAT-2 project is on the back-burner while it is decided how much it can contribute to establish "FAOSTAT-3." A concern is the lack of institutional knowledge about parts of FAOSTAT-2, especially those developed by outside consultants for which documentation is scarce.

The immediate priority is to restore confidence in FAOSTAT. In the view of the Evaluation Team, the Ad-hoc Interdepartmental Working Group on FAOSTAT and its three sub-groups are taking appropriate steps to this effect and to meet the urgent needs of internal and external users. Having restored confidence in FAOSTAT, it will be important to begin thinking about the intermediate and long-term scope of the FAOSTAT System. Many of the components of the FAOSTAT-2 Project made substantial improvements and provided a base for a "next generation" statistical system. For example, updating and harmonizing the classification system for agriculture was a critical activity. The harmonized classification system now improves linkages between the databases in the FAOSTAT System.

The Evaluation Team has suggested that the Technical Working Group on the future of FAOSTAT should undertake a detailed technical review of the various components of the FAOSTAT Project within the next few months, to include 1) The harmonized commodity/product classification system, metadata, and country aggregations; 2) The revised methodology for developing FBSs, and for calculating energy availability; and 3) The methodology underlying the "Core" (automatically calculated) Data of FAOSTAT-2. This should lead to a corporate policy for what data to release as "official" data, and what data to release as "FAO estimates" for countries.

124. **Recommendation 3.5:** FAO should develop a **corporate quality framework for agriculture, forestry, and fisheries statistics**, which provides a set of statistical standards and “best practices”: common country classifications; common approach to imputation; common definition of “official” statistics (data which are verified and agreed by country statistical offices) versus “FAO Estimates” for countries.

E. GENDER RESPONSIVE STATISTICS

125. The overall goal of FAO regarding gender responsive statistics has been to improve the use of gender and rural population factors in agricultural statistics. For more than 20 years, the Organization has attempted to achieve this by working with Member Countries to build capacity within national statistical programs to incorporate gender and population factors into their Agriculture Censuses and surveys.

126. With the support of the Gender, Equity and Rural Employment Division (ESW), ESS has worked to develop training and resource materials for incorporating a gender element for many years, and is now working to incorporate a gender dimension in the 2010 World Agriculture Census, particularly in those countries for which FAO/ESS are providing technical assistance and capacity building. In Sub-Saharan Africa, this work has been particularly relevant, since HIV/AIDS has affected women and men in different ways. Extra-budgetary funding was received to carry out the work originally, but when this had been spent, limits on Regular Programme resources reduced the scope of the work to methodological advice. Beyond work in countries, FAO has yet to develop a gender dimension in any of its major statistical programmes.

127. All three of the major statistical units have programmes focused on gender responsive statistics. ESS continues to encourage countries in which FAO is assisting with the Agricultural Census or other survey related technical assistance to develop a module that will allow disaggregation of the results by gender.

128. The Evaluation Team discussed several gender responsive programs during their country missions. In China, a gender-based module was included in the 1st Agricultural Census. China has just completed its 2nd Agricultural Census and has enhanced its gender-based module. So, the gender responsive programme for agriculture in China seems to be on a sustainable foundation. A programme was also under way in Viet Nam, and in countries in Africa, Latin America and the Caribbean. But progress is even more constrained by the slower pace of FAO’s capacity building assistance programmes.

129. It has been suggested that a gender module could be incorporated in the annual fuel wood surveys, since a significant portion of that economic activity is carried out by women. However, about two thirds of the country statistics on fuel wood production are estimated by FAO. The remaining countries provide country data to FAO, but not all of those are survey-based estimates. Nevertheless, in those countries where the data are survey-based, it may be a start to acquiring gender-based results.

130. **Conclusion:** FAO should continue its programme of gender responsive statistics, working with countries through the development of agricultural census or survey capacity building, to ensure that statistical results can be obtained on a gender-specific basis.

131. **Recommendation 3.6:** For every instance where gender responsive statistics are being generated with FAO support, an ancillary programme should be initiated to assist countries (who request it) with **analysis of the implications of gender responsive statistics**.

IV. Information Technology, Information Management and Integrated Dissemination

A. USER EXPECTATIONS OF FAO DATA SYSTEMS: ACCESS, FUNCTIONALITY, AND DISSEMINATION

Viewed from the 21st Century FAO Statistical System: A practical process is in place for regular exercise of **stakeholder oversight, review and performance measurement** of the system's accessibility and functionality for data dissemination. The system adopts an **active dissemination policy** based on input from the heaviest users, including content-driven navigation properties, and multi-dimensional sort and presentation facilities.

132. The Evaluation Team received many comments (and suggestions) from interviews and survey results on the new FAOSTAT system related to functionality, data access, and data transparency, as well as comments on other data systems in the FAO Statistics System. Improved access to FAO statistics and improved functionality of the FAO website were two of the emerging technological issues that were raised by respondents, including such functionalities as content-driven navigation properties, and multi-dimensional sort and presentation facilities. Many users, both in interviews and from survey results, know that data is "available" on the FAO site. But being available does not necessarily equate with being readily accessible. To quote one interviewee: "FAO needs to do a better job of making their data discoverable."

133. Statistical dissemination systems have different types of users with varied data needs. User needs evolve in terms of emerging needs and in terms of complexity, with more need for cross-disciplinary applications. System needs must evolve in tandem with, if not ahead of, user needs. While there is a general sense of user needs within the various statistical units, which has evolved over decades of involvement with users, there is a missing user perspective in the development and operation of many of the FAO statistical systems. There are only ad hoc, periodic user surveys or user group meetings, and no ongoing customer service questionnaire on the statistical unit websites. Documentation, user manuals and web-based user orientation modules seem also to be a missing component. The user community vests a certain amount of confidence in the FAO statistical systems, as judged from the User Survey results, as a global unbiased body of reliable statistics. It is imperative that user requirements and feedback be incorporated at all stages of system planning, implementation, and operation.

134. **Conclusion:** There is a need to inject a strong user perspective in the design, development, and operation of FAO data management and dissemination systems. Several mechanisms for acquiring and anticipating user perspectives are available. For example, formal user surveys could be done on a more regular basis; a customer satisfaction survey should be mandatory for all FAO databases in the FAO statistical system; and major/heavy users should be brought together on a regular basis to discuss data issues and new directions. Results should be compiled in a living "User Requirements" document.

135. **Recommendation 4.1:** FAO, under the direction of the Chief Statistician (see Recommendation 6.3), should develop a strategy for capturing user needs and feedback on an ongoing basis.

To pay or not to pay

136. Several responses to the user survey raised the issue of free and full access to FAOSTAT data. And, in virtually every country visited in the regional missions, the same question was asked. An interviewee put it this way, "*We don't charge FAO for the data we send to them each year, why should we have to pay for access to FAO data, some of it our own?*"

137. Because of a concern about the potential system impacts of multiple bulk downloads, ESS set up a policy of charging for heavy access to the FAOSTAT system. Subscriptions are managed by the Electronic Publishing Policy and Support Branch (KCII), not ESS. However, the Evaluation Team found seemingly inconsistent implementation of the fee-for-use policy. One government research organization in the United States, a major user of FAOSTAT, paid \$15,000 for a 1-year subscription,

which allowed a 2-person access at any one time (the so called “silver” access). An international research institute had the same access but paid nothing. Another international organization, dropped access to FAOSTAT because of the expense. In Europe, one organization has free and full access because of an arrangement with FAO on data exchange, and other government organizations piggy-back off the arrangement. In one country visited in the Team’s country missions, a government university was finally able to get free access, by going through a long, protracted period of “fighting red tape.” And, even then, it was only for a 1-year period. Besides the inconsistent implementation of the pay-for-use policy, the policy of charging for access to data runs counter to that of many UN Agencies and, seemingly, that of FAO as well.

138. Also, FAO’s mandate to create a relevant statistical system in support of the fight against hunger runs counter to the policy of charging organizations for heavy use of the data, many of whom are actively leading the analytic charge in the fight against hunger, and similarly, making it difficult for countries themselves to have full access to the FAO FAOSTAT system. If the concern about the number of bulk users is a real issue, IT safeguards could be put in place to warn of potential overload. Besides, with the development of a data warehouse and associated distributed dissemination systems, which are designed for heavy “data mining,” the need to have heavy “special” users pay for access would no longer be necessary.

139. It was also unclear to what extent money from the subscriptions (about US\$ 150,000 a year) was actually being used for strategic tasks by the Statistical Units. In fact, the evaluation team received anecdotal comments that the efforts to negotiate ad hoc subscription agreements and the costs to maintain the subscription system may be greater than the amount actually collected.

140. **Conclusion:** The move to a data warehouse for integrated management and dissemination, designed, as most data warehouses are, for heavy “data mining,” eliminates the need to charge a select group of users for bulk access rights.

141. **Recommendation 4.2:** Press forward with upgrading the system to be able to provide full and free (non-paying) access to all of FAO’s data and statistics.

B. DATA INTEGRATION AND DISSEMINATION ACROSS FAO DEPARTMENTAL AND DIVISIONAL BOUNDARIES

Viewed from the 21st Century FAO Statistical System: FAO has in place a **common set of standards** supporting data collection, processing, dissemination, and data management. Interpretability of data and “tables” is fully supplemented by metadata and clear definitions of concepts, methods used, and data quality indicators.

142. The Evaluation Team considered the integration of FAO data and dissemination to be a major priority for the FAO Statistics Programme. There needs to be a centralized mechanism, such as a data warehouse, to integrate the FAO databases and monitor the quality of the statistics disseminated. Integrating databases across FAO will require two key inputs: (1) a set of common standards for metadata, classifications, glossaries and definitions, and codes; and (2) an overarching statistical policy and governance structure for providing management and oversight of the integration process.

143. **Common standards.** FAO is the hub of many statistical and data activities and numerous statistical databases, each following their own methods of data compilation, storage, and dissemination. The data warehouse/integration concept must be viewed as a “Corporate” process that touches almost all of the functional areas of the organization. Large-scale integration for varied systems pre-supposes that standards are in place and are strictly followed. Hence firstly, there must be agreement on the standards that are to be followed for classifications, codes, and metadata among all stakeholders in the system.

144. Agreeing on common standards is always one of the thorniest issues in a data integration/management/dissemination process. Reaching agreement on common definitions, norms, and classifications is a lengthy, time- and resource-consuming process, requiring buy-in from many players. This issue has very little to do with the technical tools, software and systems that are required

for the data warehouse. This is a common standards/metadata management issue that requires time, persistence, and Senior Management endorsement.

145. The three major statistical units have all made some attempt at harmonization and standardization in recent years. The FAOSTAT-2 project revised and harmonized the classification system for agriculture (production, trade, prices, etc.) across its data domains. So, for the first time, the databases in FAOSTAT could relate to each other through a set of common standards. Forestry has consolidated much of its data and statistics on forests and forest products in its FORIS data system. Fisheries just completed an “integration” process for its Fisheries Global Information System (FIGIS), based on a Reference Table Management System, which allowed all databases to relate with others in the system. Given the work that has been done within the major statistical units to better organize and rationalize their data management and dissemination, the process for doing the same for the overall statistical system may seem somewhat less daunting.

146. The process for harmonization of databases and information in Fisheries was discussed as part of the Evaluation. The author of the thematic paper highlights the rapidly developing information and communication technology arena and indicates that it, “...offers particular opportunities and challenges.” It was also confirmed that the process for harmonization of databases and information is a time- and human resource-intensive process, and a process for which it is sometimes difficult to get full buy-in. “It is seen by staff as a tax or burden on their time and resources, creating demands from them which are not met by a sense of achievement or benefit to their own work.”⁵⁰ This is an example of a situation where the Statistics Infrastructure Investment Facility (see Section VII.A) might be used to fund fundamental (non-IT) upgrades to FAO statistical infrastructure.

147. Incorporating standards is even more important when designing decentralized data acquisition and centralized dissemination and data services. All steps need to be taken to minimize whatever gaps that may occur in the process. Applying standards, while ensuring that perceptions are uniform among all system stakeholders, builds confidence and a sense of perpetuity into systems. Hence, the underlying architecture of a system should be based on the widely accepted standards to the extent possible.

148. **Policy and governance.** The consultation found no evidence of a body that governs policy matters for statistics or for providing oversight and governance for projects undertaking integrated approaches to data collection, processing, housing, and dissemination. There are such governance structures for IT and knowledge information management projects but not specifically for statistical information. FAO needs a clearer distinction between statistical information and knowledge information and transfer. Statistics are the inputs into the process of understanding, analyzing and forecasting which reinforces knowledge transfer and decision making through FAO’s major economic and flag ship publications, such as SOFI, SOFA, SOFO, etc.. The governance structure and policy setting for statistical information should be within the FAO Statistical System itself. It would be a body that would oversee the coordination of statistical activities, provide guidelines and set standards in statistical definitions, classifications and methodologies, as well as in the statistical tools employed.

149. **Recommendation 4.3:** The Organization, under the Chief Statistician (see Recommendation 6.3), should develop an IT and ICT strategy for a data warehouse system for integrating FAO statistics systems, using data exchange standards such as SDMX which will allow information systems, and legacy databases, on different platforms to efficiently link data over network infrastructures. This would be within the enterprise strategy and architecture of FAO as adopted by governance structures for IT and ICT. The initial linking of data systems must be followed by a concerted effort to bring FAO data systems to an agreed common set of standards and classifications, under the governance structures proposed in Recommendations 6.4 and 6.5.

⁵⁰ “Thematic Paper on Fishery Statistics” for the Independent Evaluation of FAO’s Work in Statistics, James Muir (May 2008).

C. THE STRATEGY, DESIGN AND EXECUTION OF THE FAOSTAT-2 INFORMATION TECHNOLOGY

Viewed from the 21st Century FAO Statistical System: FAO has a **business model and strategic approach** for long-term IT support of the Statistical System.

150. The technology strategy adopted for FAOSTAT-2 was “based on a combination of SQL Server and .Net, in line with the computing environments of FAOSTAT’s major partners in International Statistical Offices and other knowledge/data suppliers.”⁵¹ Specifically, the strategy assumed that meaningful portions of FAO’s needs could be met by the use of “all standard UNSD related trade software particularly related to COMTRADE and FAO-ESS will harmonize its dissemination software with COMTRADE applications and related COMTRADE software.” In effect, the strategy hinges on a very close working relationship at the technology level with UNSD. Furthermore, by adopting an approach that is inconsistent with FAO’s mainstream technical standards and skill sets,⁵² the strategy inevitably implies that the external partnership is strategically more significant than internal FAO cooperation on statistics technology.

151. It should perhaps be stressed that other forms of statistical cooperation, such as sharing data, methodologies and standards, do not require a common technology strategy. In fact, data exchange standards such as SDMX have been devised precisely to permit information systems on different technical platforms to efficiently share data over the internet and other network infrastructures.

152. There is only limited evidence that FAO has benefited from this FAOSTAT-2 strategy in terms of re-use of technology or significant levels of cooperation with UNSD in the support of FAO’s statistical information systems. On the contrary, ESS is technologically isolated from the rest of FAO and the nascent internal community of practice supporting statistical systems, based largely in the WAICENT Advisory Group.

153. However, the choice of SQL-Server and .Net did not contribute directly to the problems encountered by the FAOSTAT-2 project. The adopted strategy did not impose any particular technological constraints on the FAOSTAT-2 project. Nevertheless, the adopted strategy had profound implications in other areas, particularly in terms of the ability to integrate systems, operations and support/maintenance arrangements within FAO.

154. Any mainstream software strategy, including FAO’s preferred standards, can meet the functional requirements of FAO’s statistical information processing. The strategy adopted by the FAOSTAT-2 project did not indeed provide any inherent advantages over FAO standards in supporting statistical processing, especially when a longer-term view is taken. Both software environments are “industrial strength” and, with proper design and execution, can meet the core requirements for the management of statistical data.

155. **Conclusion:** The business case for the adopted strategy has not yet been demonstrated. Furthermore, it is rather hard to see how the benefits of the externally focused software-level cooperation model could be made to work at this point. If the approach in the beginning had been, for example, for FAO, UNSD and OECD to jointly develop a single application that would be available to each on some form of Application Services Provider (ASP) basis with shared operational and software support, then the fact that a non-standard technical environment was employed would not have been particularly significant. However there appears to have been no such direct collaboration.

⁵¹ *FAOSTAT-2 Requirements for the Software Development and Hardware Infrastructure*, presented to the FAOSTAT-2 PEB Meeting of 8 December 2004.

⁵² For the purposes of this analysis, an alternative software strategy which would be compliant with FAO standards can be summarized as Oracle (as the database management system) and Java (as the software development framework).

156. **Recommendation 4.4:** An Organization-wide, strategic process to design the long-term technical support of statistical applications should be initiated by KCT and ESS working jointly, and the process should include all other significant statistical units.

D. AN APPROPRIATE IT BASIS FOR MOVING FORWARD

Viewed from the 21st Century FAO Statistical System: FAO has in place an **integrated data system** based on standardised tools and workflow management that allows dissemination from a central **data warehouse**.

157. It is **not** clear that the adopted FAOSTAT-2 strategy is appropriate for moving forwards. Over the total life of an information system, far more money is spent on maintaining and enhancing an information system than on its original development.⁵³ It should be noted that the requirement for post-implementation support can be an indicator of a system's success rather than failure: the system's role and scope is expanded to meet new or changing requirements, new user groups or data domains are added, etc. This will certainly be the case for the future of FAOSTAT, where the domain scope, operational workflows, statistical methodologies, commodity ontology, and other basic user requirements will continue to evolve. Therefore, the "sunk cost" in potentially usable FAOSTAT-2 software should not be a basis for ruling out, a priori, a change in basic strategy. The question of the basic software strategy should be reassessed, with particular emphasis on the ongoing support arrangements and practical, specific objectives for sharing and re-use of statistical software, while taking into consideration the cost of having to migrate potentially usable software.

158. One option for consideration could be the development of a statistical data repository based on data warehouse tools and techniques, as have been adopted with success by OECD, the IMF and several national statistical offices. At a recent international meeting of statistical information systems,⁵⁴ Statistics Canada, one of the participants, observed that the most striking benefit of data warehouses for statistical data "lies in the ability to provide production analysts with a wealth of information for comparing source data and identifying shortcomings and errors in the creation of final results ... and reducing the effort associated with production processing while delivering a higher quality product."⁵⁵

159. **Conclusion:** The technology strategy for FAO's statistical information systems must be revisited. A new software approach, based on a development and support strategy that takes into consideration an efficient internal technology support strategy as well as opportunities to learn from and collaborate with other major statistical offices outside FAO, may be more likely to meet – and continue to meet over the long-term – the overall needs of FAO's statistical operations by addressing internal requirements that did not receive adequate attention in the past and by re-invigorating, generally, the spirit of cooperation on all levels, not just technological. Additionally, a new start based on FAO standards could lower total ongoing costs by, for example, reducing the total amount of code in use throughout FAO through greater re-use and integration, and most likely reducing software license costs.

160. **Recommendation 4.5:** FAO should review the technology strategy for statistical information systems and develop a new approach that combines and reconciles an efficient internal technology support model with practical arrangements for collaboration with major statistical offices outside FAO. The externally-focused software cooperation and support model used to justify the FAOSTAT-2 technology strategy must be revisited to confirm that it has meaningful, long term and tangible

⁵³ A rule of thumb is that 15-20% (even higher for website applications) of an information system's original development costs will be needed *annually* for ongoing support and enhancement for the lifetime of the system. Thus, the cost of ongoing support will surpass the initial development investment in less than five years.

⁵⁴ *Meeting on Management of Statistical Information Systems (MSIS 2007)* Geneva, 8-11 May 2007. Documentation can be found at http://www.unece.org/stats/documents/2007_05.msisis.htm.

⁵⁵ Statistics Canada, *Data Warehouse Architecture to Support Analytics*, invited paper at MSIS 2007. See <http://www.unece.org/stats/documents/ece/ces/ge.50/2007/mtg1/wp.8.e.pdf>.

benefits, not just for ESS, but for the entire FAO Statistical System. Alternative support models should be considered that give adequate priority to internal cooperation at the technology level.

V. Collaboration, Partnership and Advocacy

A. VISIBILITY OF FAO IN THE INTERNATIONAL STATISTICAL SYSTEM

Viewed from the 21st Century FAO Statistical System: FAO is the **acknowledged leader in the international agricultural statistics community**, setting, advocating and coordinating the international agenda. It collaborates and partners for the **joint collection of data** and implements **all relevant international standard classifications and norms**.

161. In the area of statistics, FAO collaborates and partners with many other organizations. For example, ESS made a significant contribution to the agricultural statistics community in the work it did to develop a new and harmonized classification system for food and agriculture, which will be the basis for negotiations on new classifications by the UN Statistical Commission. There are several examples of FAO's long-term collaboration and partnering in data collection, compilation, and dissemination activities, as well.

162. Such collaboration and long-term partnerships are particularly important for fishery statistics for which FAO coordinates its statistical programme with the 14 regional and other fishery organizations, such as SEAFDEC, through the CWP on Fishery Statistics. For forestry, FAO is involved in a long-term beneficial partnership with other organizations (DG-Eurostat, ITTO, UNECE) for the collection of statistics through a Joint Questionnaire. Another successful partnership in data collection in which FAO plays an important role concerns international agricultural (fisheries, forestry) product trade statistics for the COMTRADE database, produced jointly with UNSD, DG-Eurostat and OECD. These are examples of long-term beneficial partnerships where all parties gain, including reduced response burden for member countries. They are also examples of FAO visibility in the international statistics community, particularly at the working level.

163. The Evaluation Team heard on a number of occasions in discussions with international organizations and heads of agricultural statistics, that there was a vacuum in the leadership of agricultural statistics at the international level. FAO, despite its past and mandated role as global leader for agricultural statistics, is now playing a less visible and more limited role in the global architecture for agriculture statistics, both in terms of defending the role of agriculture statistics in the global competition for scarce resources, and in setting the direction for future work in agriculture statistics. While FAO continues to maintain solid good will in the international statistics community, as a centre of excellence in agriculture statistics, the concern expressed by many stakeholders is real.

164. FAO visibility and leadership in the international statistics community requires resources, resources that are fundamentally more limited today. This should not, however, prevent FAO from setting a substantially higher ambition of exercising its leadership role and developing a strategy for accomplishing it. It is only when such an ambition and plan exist, that resources can effectively be explored. In the short run, while resources are limited, a more "aggressive" leadership role should be sought in a few strategic *fora*, such as the UN Statistics Commission (UNSC), the International Conference on Agriculture Statistics (ICAS) and the International Statistical Institute (ISI).

165. Up to the early 1990's, FAO organized joint meetings with the UNECE in the area of food and agriculture statistics, focusing on methodological developments, standards and norms, as well as data collection. The cooperation was then extended with the participation of DG-Eurostat and the OECD. For more than ten years the four organizations organized several joint meetings, seminars and workshops, focusing on assisting countries in transition in Eastern Europe and the new Republics in the former Soviet Union. By pooling the joint resources of the four organizations, these capacity building efforts were very successful. The secretariats of the four organizations created and Inter-secretariat Working Group on Agriculture Statistics (IWG-Agri) which coordinated the operations.

166. Other important outputs of the IWG-Agri were a number of Handbooks and Manuals, the most recent one on Rural Development Statistics and Agriculture Household Income, and the setting up of the International Conference on Agriculture Statistics (ICAS), which has become the most important global forum for agriculture statistics, with a solid backing of international organizations, National Statistical Offices and Ministries of Agriculture.

167. Unfortunately, the international cooperation experienced a set back in 2004/05 when both the UNECE and OECD, for reasons of changed priorities, decided to abandon activities in agriculture statistics. Neither the UN Statistical Division nor the UN Regional Commissions, except for the UN Economic Commission for Africa, have any activities in agriculture statistics.

168. Currently, the remaining major stakeholders in the international agricultural statistics community are FAO and DG-Eurostat, supplemented by the World Bank and USDA as major partners. With FAO playing a limited leadership role and DG-Eurostat being a regional organization with a somewhat different agenda and "raison d'être", there is certainly a vacuum in global agriculture leadership. This is serious not only because of the lack of leadership in the global coordination of statistical activities and methodological development, but also because there is a need to have a strong recognized voice that can defend the importance of agriculture statistics in overall statistical budget appropriations. National budgets for statistics are often static or shrinking, while at the same time, new statistical areas are being added to key economic and statistical indicators. Agriculture statistics has not fared well in this competition for resources. The current food crises and surging food prices could, however, facilitate raising the priority for agriculture statistics, provided the global leadership and advocacy for agriculture is visible and functioning.

169. This vacuum of leadership in agriculture statistics is well recognized internationally. For this reason an initiative was taken in conjunction with the 2008 UN Statistical Commission to develop an international network for agriculture statistics, modelled to some extent after the IWG-Agri mentioned above, which is about to propose a Strategic Plan for Agriculture Statistics. One of the objectives of this Plan is to facilitate FAO's resurgence as the recognized leader for international agricultural statistics. This will be a challenge for the FAO, with the results tied in part to the recommendations of this Evaluation, particularly as concerns resources and organizational structure.

170. It should be noted that this discussion concerning visibility and leadership mainly concerns agriculture statistics in the narrower sense. As far as forestry and fisheries are concerned, the situation is somewhat more advantageous, in particular when it comes to availability of international fora where the FAO leadership role can be exercised. However, due to resource constraints, the full benefits of this leadership role have not been achieved in these two domains either.

171. **Conclusion:** FAO maintains visibility in the international statistics community, particularly at the working level, partnering with other organizations on aspects of data collection and dissemination. But, there is a noticeable vacuum in the leadership of agricultural statistics at the international level, mainly because FAO is now playing a less visible leadership and advocacy role.

172. **Recommendation 5.1:** Under the guidance of the FAO Chief Statistician (see Recommendation 6.3), FAO should undertake concerted action to regain **international leadership** in agriculture, forestry and fishery statistics and make this leadership role **visible**.

B. BUILDING LONGER TERM PARTNERSHIP WITH DONOR ORGANIZATIONS

Viewed from the 21st Century FAO Statistical System: FAO is solidly focused on **technical support** for member countries in **statistical methods and capacity building**, with **improved donor coordination**.

173. The Evaluation Team heard from several organizations that it was sometimes difficult to organize work with FAO over a 1- to 2-year horizon, because of resource constraints and the relative inflexibility of the biennial budget and scheduled plan of work process. For capacity to be institutionalized within countries, longer term partnerships need to be formed between FAO and the

Donor organizations. The need for longer-term partnerships was also noted in the 2006 Auto-Evaluation of FAO Activities in Technical Support Services to Member Nations and the Field Programme.

174. A more pronounced leadership role for FAO will also facilitate linking up with major partners/donors, whether international or national. With added and more flexible resources devoted to capacity-building, and with a Strategic Plan and Vision in hand (see Recommendation 6.1), the mechanisms are there for the FAO Chief Statistician (see Recommendation 6.3), with the support and backing of the FAO Director-General and ADGs, to begin discussions with donor and partner organizations to encourage their participation in the integrated and coordinated FAO plan for capacity building in agriculture, forestry and fishery statistics at national, regional and global levels. The FAO plan for capacity building should be anchored at the highest possible level among organizations such as the World Bank, PARIS-21, DG-Eurostat, and key donors.

175. **Conclusion:** With added and more flexible resources devoted to capacity building and with the Strategic Plan and Vision in hand, and a more pronounced leadership role for FAO in statistics, conditions would be conducive to develop longer-term donor partnerships in capacity building.

176. **Recommendation 5.2:** The Chief Statistician (see Recommendation 6.3) should set up an integrated and coordinated plan with major partners/donors for statistical capacity building.

C. COOPERATION AND PARTNERSHIP IN GEO-SPATIAL STATISTICS

Viewed from the 21st Century FAO Statistical System: FAO uses the most up-to-date **geo-spatial technologies and methods** to expand the **geographic and sub-national dimensions** of its data, in collaboration with leading external users/producers.

177. The area of remote sensing for land use, agriculture, fishery, water and forestry statistics has been driven by rapid technological advances in satellite, processing, imaging and software technologies. It has found numerous important applications notably in various survey-based land-use inventories. However, technical problems still remain concerning crop identification, acreage estimates, and water resource estimates. In these areas satellite imagery data are used as supplements to traditional data collection methods.

178. Satellite imagery has so far been mainly used to enhance, but not to replace, crop acreage estimates. It is used as a major input for stratification on broad land cover definitions leading to improved statistical precision of area frame-based estimates. It is also used as an auxiliary variable in the regression estimator, which will improve the precision of the estimate.⁵⁶ By combining ground data and satellite data the efficiency can increase by as much as three times, that is, three times as much ground data would have had to be collected in order to get the same sampling error.

179. For crop yield forecasting and estimation, traditional methods are still the most efficient but promising research is going in constructing yield models that uses data from satellites. The present state of the art is very well summarized by Gallego, Carfagna and Peedell⁵⁷: "[Remote sensing] is a valuable tool to improve the efficiency of land cover area estimates from an area frame ground survey. However, it should not be used ... for direct area estimation. ... A more consistent approach is combining the exhaustive [satellite] information, with a relatively coarse scale, with more accurate information coming from a ground survey on a sample of area elements."

⁵⁶ Cost-effectiveness of Remote Sensing in Agricultural and Environmental Statistics, E.Carfagna. Using Remote Sensing for Agricultural Statistics, F.J. Gallego, E. Carfagna.

⁵⁷ The use of CORINE Land Cover to improve area frame surveys in Spain, F.J. Gallego, S. Peedell, E. Carfagna.

180. As for forestry several successful applications have been done as concerns forest resources. In a EU project on forest monitoring with remote sensing the following specific conclusions were made⁵⁸:

- Geographic stratification before the clustering improved the results.
- The best results are achieved in forest/non forest discrimination, and the most difficult category is the mixed forests.
- The problem with the satellite image classifications is that their performance is difficult to estimate in statistical terms. There are no means to estimate the size of the bias using satellite data only.
- There seemed to be general tendencies that the satellite-origin forest maps somewhat underestimate forest cover.
- The clouds were even worse a problem than what had been thought.

181. Besides having access to satellite images, remote sensing for statistical purposes requires multidisciplinary skills including GIS, IT, imagery interpretation, and statistical techniques.

182. **Conclusion:** As the technology is advancing very rapidly in the area of satellite imagery, the replacement of ground-based surveys, which often are very costly, may not be far away. For developing countries, this technology may allow more accurate and timely estimates of crop production. It is therefore essential that FAO has a body of in-house knowledge and expertise on the use of this technology for statistical purposes, particularly as applied to developing countries. FAO should take the leadership role in agricultural statistics derived from geo-spatial data.

183. **Recommendation 5.3:** The FAO Chief Statistician (see Recommendation 6.3) should create a Remote Sensing Working Group consisting of in-house and external experts, users and producers of imagery data, including for example the EU's Joint Research Centre (JRC) and USDA. Besides co-ordination of related activities the WG would also take the lead in international definitions, classifications and standards in agricultural statistics data from remote sensing.

VI. Management, Governance and Organizational Structure

A. LONG-TERM STRATEGY AND PRIORITY SETTING FOR THE STATISTICS PROGRAMME

Viewed from the 21st Century FAO Statistical System: A **long-term strategic plan** is in place as well as a **system for adjusting priorities** according to the changing needs of the FAO Programme.

184. An important product of a management, oversight and governance policy for the FAO Statistics Programme is the development of a Statistics Programme Strategic Planning Process. Such a planning process should include all of the relevant statistical units, and result in an integrated, long-term strategy for the future scope and direction of the Statistics Programme. The Strategic Planning Process should include instruments for reviewing and prioritizing existing as well as planned programme elements. It would review expected outcomes of the programme elements with respect to relevance for a broad section of the membership, and for conformity with the strategic objectives of the Organization. Additionally, the Strategic Planning Process should also consider strategic programme elements from other organizations so that strategies for possible long-term partnerships can be developed, and duplicative efforts avoided. The strategic plan should be revisited and updated on a regular time interval on the basis of changing user and Member needs and/or changing objectives of the Organization.

185. In the present structure of FAO, there is no individual or unit that is recognized as having a leadership or coordinating role for statistics. This Evaluation found no evidence that demonstrates any corporate approach to developing a strategic framework for statistics, or for identifying and adjusting priorities in any collective manner for the Mid-Term or Biennial work plans. Adjustments to Mid-

⁵⁸ Forest Monitoring in Europe with Remote Sensing (FMERS) – Main results, T. Häme, *et. al.*

Term and Biennial work plans were made, but within the respective Departments and Services of the major statistical units. ESS periodically coordinates certain activities, such as definitions, standards and international classifications, but these activities are mainly isolated operations. Some international organizations, notably the OECD which has a decentralized statistical system just as the FAO, have a Chief Statistician who is responsible for this leadership and strategic development role. The modalities for such a leadership position will be discussed further below in the section on Coordination and Leadership of the FAO Statistical System.

186. Many international statistical organizations prepare, often annually, an Integrated Statistical Programme of Work. The integrated programme of work, which is likely to derive directly from the organization's strategic plan, should present the organization's operational activities according to the different statistical categories and domains. The programme of work for each programme area can identify the various project directions and methods of work, project duration, expected outputs, resources and partners, and conferences and workshops planned. Such a programme of work is an important tool for improving internal transparency and co-ordination, as well as external visibility of the total statistical system. Other International Organizations, such as UNSD and UNECE, have found that producing an integrated work programme for statistics becomes a useful instrument to achieve effective coordination with other international statistical programmes, avoiding duplication in meetings, data collection and methodological work, and stimulating joint efforts in many areas.

187. **Conclusion:** An important product of a management, oversight and governance policy is the development of a Statistics Programme Strategic Planning Process for FAO. An important tool for improving internal transparency and co-ordination, as well as external visibility of FAO's total statistical system is the preparation of a biennial FAO Statistical Programme of Work which should provide an overview of all main statistical activities of the Organization.

188. **Recommendation 6.1:** FAO should implement a corporate-wide **Statistics Programme Strategic Planning Process** and prepare, on a biennial basis, a **FAO Statistics Programme of Work**.

B. INTERNATIONAL ADVISORY GROUP ON FAO STATISTICS AND OTHER FORA FOR INTERACTION ON STATISTICS PROGRAMME

Viewed from the 21st Century FAO Statistical System: A process for **stakeholder oversight, review and performance measurement** is undertaken regularly.

189. Effective planning and prioritization for a global statistics programme, such as that of the FAO, should have substantive input and direction from major stakeholders, including partners, users and member countries. An International Advisory Group on Agriculture Statistics (IAGAS) was established by ESS as a mechanism for receiving input and feedback from such a group of outside peers.

190. In recent times, however, the IAGAS was essentially used for "show and tell" for an already planned programme of work, with little prospect for genuine substantive input from outside. The IAGAS was not only ineffective, but proved detrimental to the programme, particularly related to the FAOSTAT project. Peers/stakeholders who would comprise an Advisory Group should have a mandate that reflects a higher degree of influence and accountability. The Advisory Group should have assurance that they will have an opportunity to substantively influence the scope and direction of the Statistics Programme, on a par with internal governing bodies such as the Statistics Coordination Committee (see Recommendation 6.5). But, the Advisory Group must also understand that, just as the internal governing bodies, they themselves are accountable for the scope and direction recommended and undertaken.

191. An effective Advisory Group would include stakeholders with a direct interest in FAO's programme of work. It does not necessarily mean that all members of the Group should have responsibilities in agriculture statistics. Members should have responsibilities that cover statistical areas adjacent to FAO's food, agriculture, forestry and fisheries focus, e.g. environment, socio-

economic, employment and population. Representatives of partner organizations would also be important members of any advisory body.

192. The IAGAS mentioned above concerned only agriculture statistics. If the objective is to improve the scope and direction of the overall FAO statistics programme, an International Advisory Group should have a wider mandate covering also forestry, fisheries, and other areas with significant data and statistical domains. FOIM and FIES would continue to have their own specialized bodies like the FRA Advisory Group and the CWP on Fishery Statistics, which provide substantive input to the direction and scope of their statistical programmes. But, representatives of those bodies would be important contributors to the broader International Advisory Group. Establishing an International Advisory Group on FAO Statistics (IAGFS) will be important to ensuring an integrated FAO Statistical Programme that is well anchored in the international statistical community.

193. For ESS, the FAO Regional Statistical Meetings as well as the International Conference on Agriculture Statistics (ICAS) should be looked to as additional fora for adapting, refocusing and anchoring its work programme.

194. The ICAS meets every three years, with the venues rotating between host countries on all continents. The ICAS is attended by heads of agriculture statistics from National Statistical Offices or Ministries of Agriculture, major international organizations such as FAO, UN, World Bank, OECD and DG-Eurostat, as well as scholars from universities and major research institutes. It was initiated by OECD, DG-Eurostat, UNECE, FAO and the National Agricultural Statistics Service (NASS) of the USDA. Gradually, FAO has assumed a more prominent role in the organization of ICAS.

195. With an existing organizational structure in place, ICAS is an appropriate and cost-effective venue for the FAO to discuss its programme of work and likely future directions for that work and receive valuable feedback. FAO could also take advantage of the ICAS by organizing back-to-back training seminars for country delegates who have already committed to attend the Conference. Other fora for anchoring and getting feedback on FAO's programme of work are the UN Statistical Commission, the FAO Regional Commissions, and the Agriculture Committee of the International Statistical Institute (ISI), which, in the absence of a strong leadership role of FAO, has emerged as one of the leaders in setting up alliances in agriculture statistics.

196. **Conclusion:** The Evaluation Team has identified a need to replace the International Advisory Group on Agriculture Statistics with an International Advisory Group on FAO Statistics which would provide substantive peer review and advice on the scope and direction of the FAO programme in statistics. The Evaluation Team also believes that there is a need to better anchor, and make more visible, the FAO Statistical Programme among NSOs and Ministries in member countries, through venues such as ICAS and the FAO Regional Statistical Commissions.

197. **Recommendation 6.2:** Restructure the International Advisory Group on Agriculture Statistics into an **International Advisory Group on FAO Statistics (IAGFS)** with a **reinforced mandate** concerning **influence** and **accountability**. Use international venues like ICAS to receive feedback from member countries on FAO's Programme of Work in Statistics.

C. COORDINATION AND LEADERSHIP OF THE FAO STATISTICAL SYSTEM

Viewed from the 21st Century FAO Statistical System: A **system of leadership, oversight and governance** is in place, allowing for coordination and coherence across the FAO Statistical System.

198. The FAO Statistical System is, at best, a loose confederation of statistical units and associated databases, with ancillary ties to other data systems in other Departments, such as Environment and Natural Resources, and Agriculture, Nutrition, and Consumer Protection. It would, therefore, have been expected that there would have been some mechanisms in place for coordinating these disparate activities across the Organization. This Evaluation, however, found no evidence of any corporate mechanism to coordinate or otherwise provide oversight across the Statistics System.

199. Implicitly, the Director of ESS might have had some responsibility for coordination of statistics in FAO, but in the terms of reference for the post there is no mention of any coordination responsibilities outside the ESS Division. The Director of ESS was designated as the chair of the Inter-Departmental Working Group (IDWG) on Definitions, Norms, Methods, and Quality Assurance when it was established, with reporting authority to the Office of the Director General. But, with the exception of a flurry of activity following the establishment of the IDWG, it has not been active for the last few years.

200. This absence of a formal mechanism for coordination and collaboration between the three major FAO statistics units (ESS, FIES and FOIM), as well as with the many units doing minor statistical work, does not mean that cooperation has not taken place. There has been coordination and collaboration on concrete topics such as revisions of classifications and for including subsets of forestry and fishery data in FAOSTAT. However, ongoing collaboration in methodological developments or in data collection and dissemination has, thus far, not occurred in any substantive way.

201. Based on interviews that the Evaluation Team undertook, particularly with International Organizations, there was broad support for the creation of a Leadership post for the FAO Statistics Programme. There are only three D-2 posts for Statistics in the entire UN System, the Director of the UN Statistical Division, The Head of the Statistics Institute of UNESCO and the Director of FAO's Statistics Division.

202. From the international community perspective, there was an expressed need, and support, for a Leadership post in FAO that would have the mandate to speak on behalf of the totality of the FAO Statistics Programme, and the contribution that the FAO programme can bring to the statistical needs for global issues, like climate change, agro-environmental degradation, and food insecurity, issues critical to the FAO mandate, as well. During the Evaluation Team's discussions with various elements of the UN Statistics Division, the Team asked one group involved in the process of preparing for a major conference on statistical and data needs for climate change, why FAO was not on the list of organizations planning to attend. The response was that they didn't know where, or to whom, in FAO the invitation should be addressed. Their solution was to send out several invitations to various units in FAO. As of the time of the interviews (February 2008), they had no confirmation that FAO would be represented.

203. There are several alternatives for the location of a Chief Statistician post within FAO. The post could be aligned with the largest statistical unit in FAO, which would be ESS, or it could be located in the offices of Senior Management, such as the Office of the DG or of an ADG. There are disadvantages and advantages with each of these alternatives. If it is placed in the offices of Senior Management, the mandate to lead the FAO Statistics Programme into the 21st century could carry a heavier weight and facilitate the integration of the Organization's statistical system. The disadvantage is that the incumbent could be isolated from the daily work of the statistics units, and the challenges under which that work is carried out. This could weaken the incumbent's ability to be a forceful advocate and act as spokesperson for statistics within FAO, and within the international agricultural statistics community.

204. The OECD has a post of Chief Statistician with the incumbent assuming both the role of Director of the Statistics Directorate, and the leadership role for the OECD's entire programme of statistical activities, which cuts across several Directorates. The Evaluation Team sees merit in aligning a leadership post, such as a Chief Statistician, with the largest statistical unit, ESS. It allows the incumbent to be close to the inner-workings of the FAO Statistics Programme and would facilitate the incumbent's role as a knowledgeable spokesperson and advocate.

205. However, in creating a Chief Statistician post, it is important that the mandate clearly state the dual role of being Director of ESS and Chief Statistician for FAO. It is also important to make it very clear that this mandate carries dual lines of authority and responsibility. The Director of ESS should report to and be responsible to the ADG of the Economic and Social Development Department (ES).

The Chief Statistician should report to the Office of the DG, directly or through the ADG, on all matters pertaining to the broader FAO Statistical System.

206. **Conclusions:** The Evaluation Team found no evidence of any corporate mechanism to coordinate or otherwise provide oversight across the FAO Statistical System. The Evaluation Team did, however, find a real and pressing need for leadership of the corporate statistics programme both from within the FAO itself, and from the international statistical community.

207. **Recommendation 6.3:** FAO should establish the position of Chief Statistician for FAO. The incumbent will hold the D-2 position currently in ESS and will have dual responsibilities as Chief Statistician and Director of ESS. The Chief Statistician should have a mandate from the Director General to lead the FAO Statistical System into the 21st Century and would report to the Office of the Director General, directly or through the appropriate ADG, on all matters related to the broader FAO Statistics Programme.

208. The Functions and Responsibilities of the Chief Statistician should include:

- a) chairs the FAO Statistics Programme Steering Committee and the Statistics Coordination Committee;
- b) within the Statistics Programme Steering Committee, leads the Strategic Planning Process for the FAO Statistics Programme, coordinates preparation of programmes of work and budget for statistical activities, monitors progress toward the strategic goals, and ensures an effective process of programme and priority adjustment during the mid-term and biennial budget adjustments;
- c) represents FAO on all matters of statistics and data with relevance to the broad FAO programme of work on statistics;
- d) proactively represents FAO at key meetings of International Organizations and partner organizations, and provides leadership for the international agenda within the agricultural statistics community;
- e) provides oversight for compliance with the FAO “Best Statistical Practices” and Principles for International Statistical Organizations in order to ensure the highest quality and relevance, and the public’s confidence in FAO statistics;
- f) provides oversight for distribution of questionnaires and other data collection activities and monitors the respondent burden FAO places on countries;
- g) jointly manages, with appropriate Divisions and/or Departments, the “core” statistical positions in the FAO Statistics Programme, including input and consultation on Statistician appointments and the disposition of Statistician posts;
- h) provides oversight of skill development programmes: training, rotation, and upward mobility programs for improving the mix of knowledge, skills, and abilities of staff within the FAO Statistics Programme;
- i) ensure statistics programmes are fully represented in the Organization’s governance processes for information and knowledge such as the Senior Management Meeting for knowledge management, the Corporate Communications Committee for Communication, and the WAICENT Advisory Group for technical matters (e.g. corporate information management policies, search functionality, information exchange protocols, content management systems, inter-operability of systems); and
- j) manages the Statistics Infrastructure Investment Facility and has final approval on selection of infrastructural projects/investments for funding (see Section VII.A).

D. ORGANIZATIONAL AND GOVERNANCE STRUCTURE OF THE FAO STATISTICAL SYSTEM

Viewed from the 21st Century FAO Statistical System: A **system of leadership, oversight and governance** is in place, allowing for coordination and coherence across the FAO Statistical System.

209. As in several other international organizations, FAO has an internally decentralized statistical system. Although ESS plays a dominant role in terms of data collection and coordinating norms and standards, many statistical and data collection activities are carried out in other technical divisions. Guidance on statistical collection needs in the Forestry and Fisheries Departments comes through their respective overarching Bodies, the Committee on Forestry (COFO) and the Committee on Fisheries (COFI), as well as the CWP on Fishery Statistics and the FRA Advisory Group. In both cases their statistical activities are driven by substantive programme directives.

210. Additionally, whether it is agriculture and food statistics, or even more so as concerns forestry and fisheries statistics, the most important major users are internal to the respective Divisions and/or Departments. Maintaining the strong "user connection" between the statistical units and the analytic units is critical to a user-oriented statistical system. To this end FAO forestry and fisheries statistics have demonstrated major synergies and efficiencies through integration of statistical and analytic units, with staff from the analytic units reporting back statistical problems/issues in countries.

211. There are, however, some potential disadvantages and resulting risks with a decentralized system. The main problem areas are related to the efficiency of individual statistical processes and to the overall quality of FAO statistics from the user's perspective (in particular, coherence and methodological transparency). A decentralized system can result in duplications in data collection, increasing the burden on national data providers. It could, therefore, be argued that some synergies could also be gained from bringing fishery statistics and forestry statistics into ESS as one Statistical Unit. However, the Evaluation Team found relatively few cases of duplication of data collection, either within FAO, or compared to other Institution's data collection. Co-located statistical units could also bring some efficiency in setting common approaches to classification across units, common requirements for metadata standards, and a common approach to an integrated dissemination system for FAO statistics. However, those synergies can also be gained through a strong cross-cutting management, governance, and coordination function.

212. There are few statistician posts in FO or FI. A major synergistic factor in both units is the interaction and support of the non-statisticians who work on data collection activities as well. For example, moving the statisticians from FOIM (2 Professional posts and 3 General Service positions out of a total of 6 P's and 6 GS) could leave the new statistics unit short of the critical mass required to maintain the quality of the statistics programme currently provided in FOIM. It would essentially break the current link between the statisticians working on current forest production and other annual forest data collections (e.g., pulp and paper capacity), with those forest resource and forest management officers responsible for forest inventory and assessments. In FIES, there are 5 Professional and 6 General Service staff classified as statisticians, out of 12 Professionals (plus one D-1) and 17 GS. Staff not classified as statisticians such as Fishery Information, Systems Development, and Data Officer all carry out statistics related work.

213. On the basis of the Evaluation Team's interviews, one of the more popular FAO databases, at least in the world of NGOs, international statistical organizations, and research institutes, is FAO's AquaStat database. The AquaStat database was developed and is maintained, not by a statistician, but by a water resource specialist in NRLW. The AquaStat data collection was begun as a function of data needs for FAO work in addressing water resources issues in countries. While the database has expanded over time, the data collection activities are still heavily tied to the substance of the water resources programme. A similar case can be made for land data and the substantive programme needs in NRLA.

214. **Conclusion:** Balancing the advantages and disadvantages of a centralized versus decentralized structure, the Evaluation Team found no strong evidence that would favour the creation of a centralized FAO statistical system over the present decentralized system. On the other hand, a decentralized statistical system will require a strong set of management, oversight, and governance mechanisms.

215. **Recommendation 6.4:** Implement a formal decentralized statistical system within FAO, by establishing a governance structure consisting of a Statistics Programme Steering Committee, under the leadership of the Chief Statistician, made up of the Directors of Divisions with units carrying out significant statistics/data and data development activities, and Divisions/units representing Knowledge Management.

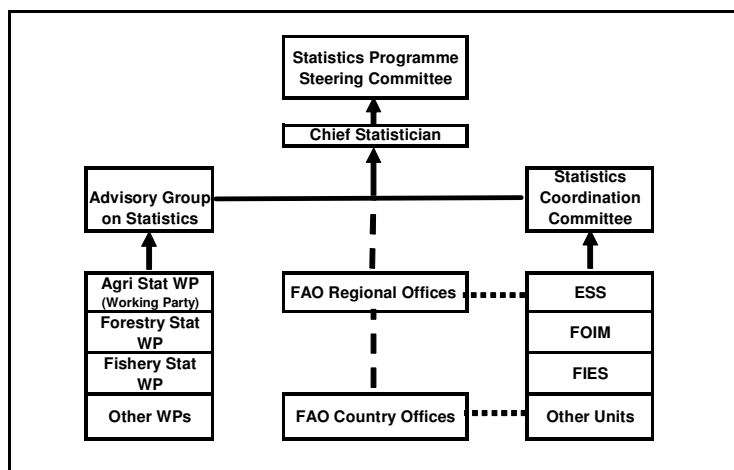
216. The Statistics Programme Steering Committee would serve as the overarching governance body for the FAO Statistics Programme. One of the functions of the Steering Committee would be to develop a Vision and Strategy for Statistics in FAO, and to develop a governance process for ensuring that the Strategic Plan is updated and adjusted through the Medium-Term and Biennial budget periods as FAO's priority programme needs change. Other functions of the Programme Steering Committee would be to provide resource management oversight for ongoing statistical programs (managing proposed shifts in statistics posts), as well as new statistical development initiatives, either within FAO, or jointly with external Partners.

217. **Conclusion:** In order to bring coordination and coherence to the tactical statistical operations of the FAO System, there is also a need to establish a working level coordination mechanism. This was suggested by the 2003 Evaluation Report of Programme 2.2.2: "In order to avoid confusion, duplication and misinterpretation, a coordinating committee on FAO statistics comprising all key units ... should be formed to review methodologies, identify priority data needs and propose corrective action, where necessary". The present Evaluation Team not only supports this recommendation but suggests how it might fit into a coherent framework of coordination, governance and oversight.

218. **Recommendation 6.5:** Establish a Statistics Coordination Committee, with representation from each of the statistics and data systems units. The Statistics Coordination Committee, under the leadership of the Chief Statistician, would meet on a regular basis to exchange information on statistical and data gathering activities across the Organization and to coordinate potential joint efforts in technical support, questionnaire development, and the harmonization of standards, classifications, methodology, and quality of information. When more strategic issues are identified they would be elevated to the Programme Steering Committee for consideration.

219. Figure 6.1 illustrates all the proposed components of the new organizational and governance structure for the FAO Statistics Programme.

Figure 6.1: Proposed new organizational and governance structure



E. ORGANIZATION OF FAO'S STATISTICS DIVISION WORK

Viewed from the 21st Century FAO Statistical System: FAO is solidly focused on **technical support** for member countries in **statistical methods and capacity building**, with **improved donor coordination**.

220. The 2003 Evaluation Report⁵⁹ cited above suggested “more integrated operations among the three ESS units, including common approaches to ensuring data quality, responding to new statistical data demands and providing support to countries, in order to enhance the coherence and synergy within the ESS programme functions.” It also suggested the upgrading and strengthening of the Basic Data Unit (ESSB). Later, the three services were reduced to two, the Global Statistics Service (ESSG) and Country Statistics Service (ESSS).

221. The call for more integrated operations by the 2003 Evaluation Report was based, among other things on a questionnaire survey, which showed lack of feedback and/or direct communications between the national statistical units and the respective FAO statistical unit and a lack of FAO follow up to interventions by national statistical units.

222. Investigations made by the present Evaluation Team, based on interviews and survey results, indicate that little has been done to correct and address this systemic problem for FAO Headquarters. A comment from a user of FAO Statistical data speaks to this systemic problem: “Although the FAO staff is generally competent with considerable expertise in their fields, there is often a lack of contact with the national officials responsible for submitting national data and thus they may be unaware of the constraints under which the national officials work.” Another comment from the NSO survey makes a similar point: “I also would like to encourage FAO to be more active. I have worked as a head of agricultural statistics for the last three years and you have sent very little information of your activities to us.”

223. The disconnection between capacity building and the quality of the data submission to FAO, as discussed earlier, has roots in the organizational and operational modalities of the ESS, and likely in other FAO statistical units as well.

⁵⁹ Evaluation of Programme 2.2.2 (Food and Agriculture Information) Activities related to agricultural statistics, May 2003, page 30.

224. The two ESS units have very distinct role and functions. Staff dealing with data collection activities (ESSG) have generally very limited person-to-person contact with data providers. They rarely undertake country missions or attend international meetings, and managed no field projects during the period under review. The situation for staff in ESSS, responsible for agriculture census, statistical methods, and overall capacity building, is the opposite. They manage many field projects and travel frequently to member countries. However, when undertaking country missions or attending international meetings, it seems they rarely take the opportunity to investigate if the country or countries in question have particular problems or queries in connection with questionnaires or with classification issues related to supplying data to the FAO. But those types of visits could have a very significant impact on the quantity and quality of country data supplied to FAO. It could also be an effective means for establishing and maintaining the improved communication channels with countries.

225. There are, therefore, reasons to consider organizing the work of the two services of ESS according to regional teams. Members of the teams, particularly when on mission to a country, would have dual responsibilities, as technical specialists in a statistical area, and a responsibility to assist with statistical capacity building as well as direct support for data collection. Many problems, queries or misunderstandings could be resolved directly in a timely way through direct person-to-person contact, or through back-up from FAO headquarters.

226. **Conclusion:** The present, as well as previous, evaluations have shown that there is a lack of feedback and/or direct communication between the national statistical offices and the respective FAO statistical units. An organizational structure with a regional orientation would help to establish two-way communication between country statistical offices and FAO statisticians. The regional teams could be extended to cross-departmental/divisional teams which could, as the situation dictates, include statisticians from fishery, forestry, and/or other units such as NRL or EST, which have in-country contact on data-related issues.

227. The re-orientation of ESS and increased openness to two-way communication is a “culture change” for ESS, but one the Evaluation Team believes will work to improve country client satisfaction and data quality. As a spill-over effect, this approach will help member countries see the FAO statistics programme as a consolidated package of products and services, a view that many countries do not now have, and an issue raised during regional missions by the Evaluation Team. Another spill-over effect of this approach to organizing work along flexible teams, is that it will facilitate the opportunities for job rotation and training, which will work to improve the knowledge, skills, abilities, and morale of ESS staff.

228. **Recommendation 6.6:** Form a series of **regional teams** from among the two Services of ESS. Members of the Teams, particularly when on mission to a country, would have dual responsibilities, as technical specialists in a statistical area, and a responsibility to assist with statistical capacity building, as well as direct support for FAO data collection.

F. ROLE OF THE REGIONAL STATISTICIANS

Viewed from the 21st Century FAO Statistical System: FAO is solidly focused on **technical support** for member countries in **statistical methods and capacity building**, with **improved donor coordination**.

229. The Regional Statistician will be a critical link in an environment of heightened priority for Statistics within the FAO Programme, and an even more critical player in the re-orientation of the ESS approach to offering services to Member Countries. At the moment, ESS does not have out-posted staff in sub-regional offices or in the Regional Office for Latin America and the Caribbean. Also, it is not clear why there is a statistician in the FAO Regional Office for Europe, where partners like DG-Eurostat are playing a major role both in methodological development and capacity building, and only a one-person team in Africa and in Asia where country needs are more demanding and dire (see Section II.A).

230. There were discussions during the country missions to Asia Pacific and Latin America, and with partners and FAO staff about the profile of a Regional Statistician. There was a convergence in opinions that one of the major roles should be that of facilitator, mobilizing knowledge and resources from within FAO and others organizations and channelling it to member countries. A second major role, for which more field presence would be needed, is to provide support for in-country capacity building, either through coordination of short term missions by experts in a particular field (e.g. agricultural censuses), or more long-term activities, funded through voluntary contributions, to assist the country in improving their national statistical system.

231. A recent development in some regional offices is the integration of statistical with analytical work in order to provide evidence-based advice on issues ranging from the impact of high food prices to monitoring food insecurity at the regional level. This new, but substantive role for regional statisticians is linked to the ongoing implementation of IEE recommendations already accepted by Management, that "Regional Offices should monitor regional perspectives and needs" and that they "devote much of their efforts to analysis and policy work".

232. Finally, but no less important, in the new quality-oriented thrust for the FAO Statistical System, it will become imperative that the Regional Statisticians become generalists rather than subject matter specialists, in order to facilitate broader integration into ESS operational activities and, to a lesser extent, the work in FIES and FOIM. This can also be re-enforced with an organization-wide rotation policy that includes all statisticians, overseen by the Chief Statistician, an approach which is strongly recommended.

233. **Conclusion:** The role of, and need for Regional Statisticians in the new quality-oriented thrust for the FAO Statistical System is greater than ever. The need is expanding just at the time that regional statisticians are being asked to play more substantive analytic and policy roles in the Regional Offices, and, with the proposed new work organization in ESS with regional teams (see Recommendation 6.6), the efforts in capacity building must be significantly strengthened.

234. **Recommendation 6.7:** All the posts of Regional Statistician should be filled through rotation within ESS. FAO should also consider expanding the Regional Statistician office for Africa and Asia, where there is an increased need for backstopping new funding efforts in agriculture statistics.

G. ROLE OF FAO COUNTRY REPRESENTATIVES

Viewed from the 21st Century FAO Statistical System: FAO is solidly focused on **technical support** for member countries in **statistical methods and capacity building**, with **improved donor** coordination.

235. In interviews during regional missions, the Evaluation Team was told that in recent years ESS questionnaires were sent, all too frequently, to the wrong agency and/or person, hoping that the questionnaire would eventually find its way through the bureaucracy to the appropriate agency. FAO should, through consultation with national statistical offices and FAO Country Representatives, obtain an up-to-date list of contact persons, confirmed by countries, for each particular questionnaire or part of questionnaire. When staff from FAO Statistics visits a country, they should take every opportunity to visit with the respective contact persons for the questionnaires.

236. Data compilation and their quality are primarily the responsibility of national authorities. Within the Organization, the responsibility for following up with questionnaires should not only be that of FAO Headquarters, but also that of the regional and sub-regional statistical officers and other staff in the decentralized structure, including the FAO Representatives. All should be aware of their proprietary interests in the quality of country data. The FAOR, in discussions with staff from national statistical offices, could take the opportunity to make them aware of their ownership in the quality of statistics published by FAO. And, where necessary, the FAOR could remind countries of their obligation to provide statistics (Under Article XI.2, Member Nations shall also communicate regularly to the Director-General statistical, technical and other information published).

237. The Evaluation Team, particularly in its mission experience in Africa and Asia, discussed the possibility of an enhanced role for the FAOR Office in coordinating aspects of FAO's statistical-related activities in-country. In some cases the Team found a positive attitude from FAORs or Assistant FAORs, while in others there was clearly a lack of willingness and/or time to take on added responsibilities. FAO HQ would also be expected to provide FAORs with enhanced support, including training and back-up on questions and requests from NSOs, through the regional teams proposed for ESS (recommendation 6.6), or production of best practices and learning materials (CDs, on-line courses, etc.). If FAO statistical work is going to become a priority, that priority needs to be reflected in the country and regional FAO system, along with the recognition, support and incentives to carry it out.

238. **Conclusion:** FAO Representatives could be more involved with the statistical reporting and development activities in their respective countries. That could involve, among other things, communication and feedback with countries on statistical reporting and/or capacity building, channelling questionnaires to appropriate Ministries/NSOs and verifying full completion of the questionnaire prior to transmission to FAO Headquarters. Assistant FAO Representative (Programme) have the following in their TOR: "Collect and consolidate country data on food, crops, livestock, forestry and fisheries, including information on external aid; participate in monitoring changes in national policies affecting the agricultural sector; assist in providing timely information and data to FAO Headquarters, Regional and Sub-Regional Offices".

239. **Recommendation 6.8:** Given the high priority now being assigned to FAO's role as global agricultural statistics agency, FAO Country Representatives should have as part of their job description to represent FAO's statistical reporting and development activities in the country, assisting in ensuring a regular and dependable flow of statistics to the FAO databases.

H. NEED FOR STAFF TRAINING, SKILL ENHANCEMENT AND SUCCESSION PLANNING

Viewed from the 21st Century FAO Statistical System: FAO's work environment and productivity benefit from ongoing programmes of training and skill enhancement.

240. Except for language training and courses in project writing, there is little in-house training of staff in order to maintain their theoretical knowledge and/or to raise their competence level. For an organization having technical competencies central to its value and capacity building as one of its main objectives, it is surprising to find that there are no efforts underway for in-house capacity building. Lack of training and other skill enhancement mechanisms does not facilitate the outreach activities of FAO, whether it concerns assistance to member countries or establishing partnerships with other organizations or donors. It is true that certain staff are beneficiaries of "on-the-job" training. But that is hardly sufficient. Systematic and continuous training programs should involve all staff in order to ensure that they are able to move from position to position.

241. Besides the issues of staff motivation and people management, there are two other critical issues related to training:

- a) if the proposed strategy of organizing staff in regional teams with the dual functions of capacity building and country assistance in data collection is going to be effective there must be a programme of **continuous training** in statistical methods and applied statistics; and
- b) the age structure of staff, particularly in ESS, is critical in the sense that several key persons are to retire in the next few years, but there seems to be no **contingency plans** for either recruiting new people or for training in-house staff to assume the tasks of the persons leaving. FAO is certainly not unique among UN organizations when it comes to lack of contingency planning and slow recruitment processes, but the fact that key high level posts can be vacant for a year or more is a sign of the failure of the corporate Human Resource System, and in the present context has been detrimental to the continuous operation of the statistical units.

242. **Conclusion:** There is an urgent need to set up staff training schemes covering substantive statistical areas and to set up contingency plans for posts to be vacated in the near future. Under the guidance of the proposed FAO Chief Statistician, permanent training programmes in statistical methodologies, applied statistics and IT for all FAO statisticians should be initiated. An individualized training plan should be developed for each staff, geared towards improving their current competencies to ensure that they provide state of the art services and for career development.

243. **Recommendation 6.9:** Under the guidance of the FAO Chief Statistician initiate a **programme of training and skill enhancement** for all FAO staff doing statistical work, including regional and, when appropriate, country office staff as well.

VII. Ensuring Adequate Resources for the FAO Statistics Programme

A. NEED FOR A STATISTICAL INFRASTRUCTURE FACILITY

Viewed from the 21st Century FAO Statistical System: Systematically **prioritizes and rationalizes resources**, providing flexibility in meeting new data demands.

244. An integrated FAO Statistical System must cut across many different statistical activities and organizational units within FAO. To build and maintain a strong integrated system, based on a decentralized organizational structure, will require not only strong co-ordination by the Chief Statistician and a Statistics Programme Steering Committee (see Recommendations 6.3 and 6.4), but also a common fund for investments in Statistical Infrastructure. Structuring these investments in statistical infrastructure would be an important component of the multi-annual programming and priority setting process for the FAO Statistics Programme.

245. The development of statistical infrastructure involves more than Information Technology (IT). Developing a corporate statistical infrastructure involves methodological issues, classification issues, harmonization of definitions, metadata, and data acquisition issues which cut across all statistical activities of FAO, in addition to specific IT infrastructure and functionality requirements. There is a need for a funding mechanism that can be drawn upon for developing the non-IT components of the organization-wide statistical infrastructure. In the past, many of these activities were carried out in isolation with the assistance of consultants and funded by each of the statistical units.

246. The availability of a fund for statistical infrastructure investment would stimulate the various statistical units to work together on a common objective of building a strong statistical infrastructure. The OECD used a similar programme to great success. The OECD's Statistical Policy Group (that organization's governing body) decided to develop a common quality framework and apply that framework throughout the Organization. Corporate funds were allocated to this effort (€ 250,000) and guidelines for the production process were established and agreed to by the Directors. Once this process was started, the statistical units in the various Directorates had incentives to fix identified problems using funds from the "Statistics Investment Facility."

247. **Conclusion:** The Evaluation Team has recognized that in developing an integrated FAO Statistical System, an important component would be a fund for statistics infrastructure investments from Regular Programme funds. The Statistics Infrastructure Investment Facility would be used to fund new or renewed statistical infrastructure projects within FAO, jointly with other organizations, and/or with member countries. This fund should be seen in the broader framework of creating a coherent strategy for obtaining an integrated FAO Statistical System. Such a Facility could be the "glue" that bonds and stimulates different Departments to undertake joint ventures of common interest.

248. **Recommendation 7.1:** Initiate a Statistical Infrastructure Investment Facility from Regular Programme funds. The Infrastructure Facility would be used to fund new or renewed statistical infrastructure projects within FAO, jointly with other Organizations, and/or with Member Countries.

B. RE-PRIORITIZATION OF DATA COLLECTION ACTIVITIES AND RESOURCE SAVINGS

Viewed from the 21st Century FAO Statistical System: FAO systematically prioritizes and rationalize resources, providing flexibility in meeting new data demands.

249. FAO should make greater use of data already collected from other international organizations and from the data portals of developed countries. The Evaluation Team found a substantial duplication concerning ESS's process of soliciting annual statistics (questionnaire data) from each individual Member State of the EU, when that same data was being collected, verified, and processed by DG-Eurostat, leading to extra burden for EU countries and for FAO. In the comments to the survey that the present Evaluation Team undertook among NSOs and Ministries of Agriculture, many of the European countries stressed that FAO should collect data on EU countries only from DG-Eurostat, in order to both reduce the response burden of countries and ensure consistency of international data.⁶⁰ Only if particular data were not collected by DG-Eurostat should a supplementary questionnaire be used.

250. FAO's major statistical units should, therefore, immediately undertake a focused review of their data collection activity with respect to statistically advanced countries, with the aim of achieving long-term resource savings for FAO, and reduced response burden for countries. All the 27 countries in the EU plus the European Free Trade Association (EFTA) countries should be treated as one "CountrySTAT". A memorandum of understanding (MoU) should be set up with DG-Eurostat to receive all data from their portal. The MoU could also include agreement on communicating changes and modifications in definitions, standardization and methodology, and for assistance in collecting supplementary information from countries, e.g. when DG-Eurostat does not have a particular data series.

251. For other countries with well-developed statistical systems, FAO should negotiate MoUs or other agreements to obtain questionnaire data from web-based portals, again obtaining resource savings and reduced response burden for countries. The ultimate objective should be that FAO harvests the data from these countries' web portals or other dissemination and exchange mechanisms. When organizations like the OECD or DG-Eurostat adopted these modalities of collecting data from member countries there were considerable savings in terms of staff and timeliness of collection.

252. Such an effort will require some upfront investment on the part of FAO and the individual countries who would agree to be partners in the data harvesting exercise. The Evaluation Team found expressed willingness of DG-Eurostat and selected member countries to cooperate in this activity, only awaiting FAO action.

253. The joint data collection, data validation and dissemination undertaken by FAO, DG-Eurostat, UNECE and ITTO in the area of forest statistics is a successful model that should be encouraged and copied by other statistical units in FAO. Cooperation in forest statistics might be easier than in agriculture statistics as the latter often is connected to regulations requiring a data collection activity. However, the Evaluation Team learned that cooperation in forestry was not always that good. The main reason, cited unanimously among people interviewed, as to why it works well today is the good personal relations and professional openness and generosity that have been established between staff responsible for forest statistics in the four organizations. Good cooperation is thus conditioned by having the right people on board and a corporate policy that fosters and rewards such cooperation.

254. Just because a particular series with a particular periodicity has been collected historically, does not justify its continuation. The process of prioritization implies looking at which:

⁶⁰ In the questionnaire to NSOs and Ministries of Agriculture the need to enhance the cooperation efforts in Europe was stressed by all the responding countries. 12 out of 19 comments from representatives of European countries focused on the need of greater harmonization between different sources of data in Europe, quoting Eurostat as being a more reliable source of information.

- data domains could be abandoned because user needs have waned or because another organization is doing a more comprehensive job in collecting the same or similar data series; and
- data domains can be reduced – a reduction in the number of variables collected, or in their periodicity, e.g. every two or three years instead of each year. Such a process of rationalization would free up resources for taking on new or higher-priority data collection activities, such as those identified in the list of Emerging Data Needs in Chapter II.

255. In discussions with the major statistical units and from the Forestry Review, the Evaluation Team identified several areas for potential resource savings from adjustments in data collection and editing activities:

- the Food Balance Sheets (FBS) for most countries do not change from year-to-year. Generating the FBS every two years instead of every year would lead to a significant human resource saving;
- the COMTRADE data are re-validated by ESS each year, largely for use in calculating the detailed FBS. If the periodicity of the FBS changes, there would be significant human resource savings;
- FOIM undertakes an annual pulp and paper capacity survey. The survey focuses on a limited number of processors, and has questionable value since the capacity does not change significantly from year-to-year. The Forestry Thematic Paper, in a discussion on relevance as a quality issue, asks the following: *“Are the data helpful and applicable to the task of the data user? For the whole of forestry statistics: How relevant are the issues covered and variables measured? Does e.g. “Pulp and Paper Capacities Survey” meet the criterion of relevance? Or can one conclude that the production volumes, collected as a part of joint questionnaire, are more relevant, and capacity can be reliably enough derived from production possibility estimates?”* Dropping the data collection or reducing the periodicity of the collection could yield human and financial savings; and
- similar cases for savings by reducing periodicity might be made for the several production inputs data collection activities currently undertaken annually.

256. **Conclusion:** FAO should make greater use of data already collected from other international organizations and from data portals of statistically advanced countries. Resource savings can be gained from a review of the scope, coverage and periodicity of all data collection activities, with the view of deciding if there are activities that can be abandoned or whose periodicity and coverage can be adjusted.

257. **Recommendation 7.2:** (1) Data from EU and EFTA countries and other countries with well-developed statistical system should be harvested from web portals when appropriate; (2) FAO should undertake an Organization-wide review of the scope, coverage and periodicity of all data collection activities with the view of deciding if there are activities that can be abandoned or whose periodicity and coverage can be adjusted.

C. PRIORITIES FOR RE-DIRECTING REGULAR PROGRAMME RESOURCES TO STATISTICS

Viewed from the 21st Century FAO Statistical System: FAO is solidly focused on **technical support** for Member Countries in **statistical methods and capacity building**, with **improved donor coordination**.

258. The IEE has called for “considerably greater priority to the provision of basic data and statistics”. The essence of the Evaluation Team’s proposals is a “fundamental rethink” of statistical activities from a user perspective, which is stressed in the IEE recommendations on Statistics. The Evaluation proposals are a “fundamental rethink” that will allow FAO to return to its “fundamental” comparative advantage - building capacity and the quality of statistical data collection activity in its areas of competence. Existing resources, after years of decline, have left several FAO statistical units

below a minimum critical mass⁶¹. To obtain these quality goals for basic statistics requires a re-direction of FAO resources toward the FAO Statistics Programme, without which the FAO statistics programme will continue on the road to obsolescence and irrelevance.

259. As mentioned earlier, there are a number of data collection activities and products that the evaluation team has already identified that can be rationalized. A thorough review of data collection activities will eventually yield even more efficiency savings that could be redirected toward capacity building. But, those savings would not be enough to create a sufficiently strong momentum for raising the quality of national statistical capacity or of the FAO Statistics Programme. Staffing levels in ESS alone were 80 posts 10 years ago, while the level in 2007 was 46. The Fisheries and Forestry units have also lost several positions and currently don't have dedicated staff either in the regions or in HQ focusing on capacity building activities.

260. The priority use of re-directed resources should allow for restoration of the critical mass required to revamp the FAO statistics programme both in terms of methodological development and capacity building. Expanded resources for methodological development (e.g. handbooks, manuals, compilation of best practices, etc.) will allow FAO to fill a major expressed need and regain its influence in statistical "best practices" and training materials for capacity building for agriculture, forestry and fishery, and related cross-cutting areas. Expanded resources for capacity building would allow FAO to take greater advantage of additional extra-budgetary funding and collaborative partnerships, by allowing a more focused approach to potential donors and partners, the latter in coherence with a comprehensive FAO capacity building strategy.

261. The Evaluation Team believes that both methodological development and capacity building activities are part of a continuum and that in the case of statistics it should be funded from regular programme resources. Voluntary contributions, in line with the new FAO Programme Model, will basically allow for the expansion of field activities, but minimum core staff, i.e. expertise, and non staff resources should be funded from the assessed contributions. TCP funds, as part of the RP, will also be instrumental tools for resource mobilization, particularly in the case of census work.

262. In the preceding chapters and sections, the Evaluation Team has discussed a number of issues for strengthening FAO statistics with the view of improving its quality and coverage and having it focused towards an ideal 21st Century Statistical System. A number of conclusions and recommendations have been made, addressing mainly capacity building and organizational issues. However, the recommendations by themselves are hardly enough to meet the objectives specified without additional resources in one form or another. To this end, the Evaluation Team has analysed a number of options which are presented below in the form of three scenarios. All the three scenarios are based on the following two general assumptions:

- a) ESS will reorganize the work in the form of flexible regional teams as described in the chapter on Management, emphasizing capacity building in tandem with assistance to countries in data collection and in reporting data to FAO; and
- b) data collection activities are streamlined as described above, resulting in some savings in staff resources to be directed towards capacity building.

Scenario I: Status Quo

263. *Assumption:* No additional resources for FAO statistics, that is, the relative 2008/2009 resources for statistics in agriculture, forestry, and fisheries remain unchanged in the coming years. ESS continues to re-direct resources toward the most pressing data need namely, building/re-building statistical capacity. Resources would come from some resource savings from reconsidering some data collection activities, and from an internal redirection of resources from the Global Statistics Service

⁶¹ Minimum critical mass can be defined as the minimum level of resources required to effectively carry-out all normative functions in a unit. For example, ESS cannot use resources to undertake the development of normative products such as new statistical methods reports or training manuals on "best practices" for use in member countries, because the resources are already committed to field programme country support.

toward technical support for data reporting, statistical capacity building, and implementation of CountrySTAT.

264. *Possible benefits:* On the assumption of additional funding commitments from donors, and based on performance of previous years, it would be possible to handle between 2-4 extra-budgetary projects per biennium (based on available staff and donor interest). The additional 2-4 projects would be a positive step, but not enough to stop the continued deterioration of country agricultural statistics capacity.

265. *Costs:* Resources re-directed from the Global Statistics Service, would result in a more limited global and regional reporting of basic agricultural statistics. FAO would release only statistics reported and verified from official country submissions, with limited imputation of data based on mirror trade statistics, and estimates of regional totals by FAO. FBS/SUAs would be calculated only for reporting countries and regional totals, leaving out a significant number of LIFDCs.

266. *Further medium-term results (3-5 years):*

- The development of an integrated FAO Statistical System would stay at the discussion level, without any blue print, despite the appointment of a Chief Statistician.
- The development of a 21st century FAO Statistical System, as described in section I.5, would be unachievable.
- The development of a replacement to FAOSTAT-2 would be severely stalled.
- Data coverage and quality would continue to decline.
- No improvements in communication with users and stakeholders, except for certain data suppliers in conjunction with capacity building efforts.
- Global agriculture statistics community would continue without any FAO leadership.
- Donors would have little interest in FAO as there would be too limited in-house capacities for undertaking projects.

267. *Long-term results (5-15 years):* The FAO Statistics Programme would be marginalized and rapidly become less relevant and less useful for internal and external analysis and decision making. After abandoning critical elements, the FAO Statistics Programme would finally reach the point of obsolescence and irrelevance.

Scenario II: Recovering Lost Ground

268. *Assumption:* Regular Programme resources are re-directed to the Statistics Programme in order to support 8 additional professional staff and increase non-staff resources to 40 percent of the programme budget. This change would be equivalent to a 33 percent increase in the Statistics Programme resources and would allow Statistics, in terms of its proportionate share of Net Appropriations for technical work, to increase to the level of 2000-01 (5.2%). Still far below the proportionate level in 1994-95 of 6.7 percent, but up from 4.5 percent in 2005-06.

269. *Possible benefits:* The increase in staff resources would allow the filling of critical capacity building expertise in areas such as livestock, forestry and fisheries, statistical methods, and agricultural census, and in conjunction with an aggressive Partnerships and Fellowships Programme (e.g. TCDC, APO, internships, etc.) could allow 15-20 additional extra-budgetary projects per biennium. The increase in the non-salary funding would allow for a more substantive set of training and regional workshops on norms, definitions, standards, and classifications and “cross-walks” for linking country definitions and standards to international standards. It would also initialize the Statistics Infrastructure Investment Facility, with an initial US\$ 250,000 in Regular Programme funding.

270. Re-building in-house expertise in the statistical support and capacity building areas would be seen as a plus from a donor perspective. This would create much stronger incentives for attracting donor support for FAO capacity building projects. FAO would be increasingly seen as a credible partner.

271. With additional resources for capacity building, fewer resources would be re-directed from the Global Statistics Service. The Global Statistics Service would retain resources that could supplement officially submitted data with data on primary crop production and trade from other secondary sources, including several from FAO (GIEWS and its Crop and Food Supply Assessment Missions, etc.) for many of the LIFDCs.

272. *Further medium-term results (3-5 years):*

- The development of an integrated FAO Statistical System would be implemented under the coordination of the FAO Chief Statistician.
- The development of a FAO Statistical System, close to the ideal as described in Section I.5, would take form, substance and direction.
- A replacement to FAOSTAT-2 would be implemented.
- Data quality would continuously be improved although much would still have to be done. Ownership of data would be successively moved to countries.
- FAO Statistics would have established regular communication channels with users, stakeholders, and data suppliers.
- FAO would have assumed the global leadership in Agriculture statistics.

273. *Long-term results (5-15 years):* If the relative resource level, proposed in this scenario, is at least maintained over the next 15 years, then FAO will continue to be a global leader in agriculture statistics and provide competent and comprehensive statistical services to member countries and other stakeholders. To have a full-fledged 21st Century Statistical System would, however, **require many more resources than those envisaged in this scenario**, which only aims at recovering lost ground and returning to a **minimum critical resource level** on which FAO can be considered a credible player and partner.

Scenario III: Partially Recovering Lost Ground

274. *Assumptions:* Regular Programme resources are re-directed to the Statistics Programme to support 4 additional staff and as in the preceding scenario, increase non-staff resources to 40 percent of the programme budget. In terms of funds, this option represents a smaller increase in resources overall. Due to the distribution of funds between human and non-human resources, it would have a distinctly different impact on the FAO statistical capacity and country technical support programme.

275. *Possible benefits:* The limited increase in staff resources would allow the filling of only a few critical resource gaps, like livestock, fisheries, and statistical methods. More reliance on contract staffing of the capacity building programme would be required. In this particular, FAO should explore the possibility of creating local/regional expert networks, setting up pools of experts that can be used on a retainer basis using WAE contracts within a Charter (defined by FAO) that would serve as a quality assurance system. Such a funding approach, in conjunction with an aggressive Partnerships and Fellowships Programme (TCDC, APO, internships) could allow 10-12 additional extra-budgetary projects per biennium. The non-salary funding would be used for a substantive training programme to be implemented by contractors working on FAO capacity building projects, as well as the set of training and regional workshops on norms, definitions, standards, and classifications and "cross-walks" for linking country definitions and standards to international standards, mentioned in Scenario II. The present scenario would also start up the Statistics Infrastructure Investment Facility at US\$250,000.

276. *Costs:* Without experienced in-house staff, much of FAO capacity building efforts would be undertaken with contracts and consultants. As indicated in the Auto-Evaluation of ESS/Field Programme, client countries find the level of knowledge and skills of some contractors lacking.⁶² Because of the contractors' lack of familiarity with the FAO approach and methods for capacity building, one of the Auto-Evaluation recommendations was to establish a training programme for all

⁶² Auto-Evaluation of FAO Activities in Technical Support Services to Member Countries and the Field Programme (PE 222S1), page 12.

contractors working on FAO capacity building projects. While workable, this is not an ideal approach for a capacity building programme.

277. *Further medium-term results (3-5 years):*

- The development of an integrated FAO Statistical System could with the extra resources be partially implemented under the coordination of the FAO Chief Statistician, although not to the extent as was envisaged in Scenario II.
- For the development of a FAO Statistical System, close to the ideal as described in Section I.E, there would be resources only for a few components.
- A replacement to FAOSTAT-2 could be implemented.
- Data quality would be improved although much would still have to be done. Ownership of data would be gradually moved to countries.
- FAO Statistics communication channels with stakeholders (in particular users and data suppliers) could be improved but not to the extent desired.
- FAO would gradually increase its global role in Agriculture statistics.

278. *Long-term results (5-15 years):* If the relative resource level, proposed here in scenario III, is maintained over the next 15 years, then FAO will, compared to scenario I, improve both its role as a global *leader* in agriculture statistics and in the provision of acceptable statistical *services* to member countries. But, compared to scenario II, the smaller in-house expertise in capacity building would not be enough to regain a **minimum critical resource (human) level** on which FAO can be considered a credible player and partner, possibly making collaboration with donors more tenuous.

279. **Conclusion:** FAO has a decentralized statistical system whose resources are scattered over different departments with very little coordination. Resources for the Statistics Programme have deteriorated and reached a funding level which is significantly below what could be characterized as a minimum critical level. The FAO Statistics Programme has serious problems as concerns both coverage and, above all, quality of its statistics. FAO's ability to fill its basic mandate is in jeopardy. Based on User comments, the international good-will that FAO enjoys will fade as quickly as the quality of its Statistics Programme.

280. The Evaluation Team has in this report identified a number of organizational measures to be taken in order to streamline and coordinate the FAO statistical production and dissemination system. These measures will, however, only be effective if they are supplemented by re-directed resources. Of the three scenarios that the Team has analyzed only the second one entitled Recovering Lost Ground would have any long term impact and match what the IEE calls a "considerably greater priority to the provision of basic data and statistics." The scenario Status Quo would, in the long run, simply hasten the crumbling of the FAO Statistical System. The scenario 'Partially Recovering Lost Ground' would certainly help the immediate situation, but the Systems viability for the long run would be questionable.

281. **Recommendation 7.3:** Regular Programme resources are re-directed to statistics in order to support 8 additional staff and increase non-staff resources to 40 percent of the programme budget, representing roughly the same share of Net Appropriation level as in 2000-01 (5.2%). The Statistics Infrastructure Investment Facility should be initially funded at US\$ 250,000 in Regular Programme funding.