Agricultural and Rural Statistical Development – Capacity Building

Lessons learned from FAO assistance in capacity building in food and agriculture statistics in African countries.

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Abstract

Strengthening the capacity of national agriculture statistics systems in Member countries to produce good quality food and agriculture statistics is one of the major missions of the FAO Statistics Division (ESS).

For several decades, ESS has been conducting capacity building activities through various channels, including preparation and dissemination of methodological and technical guidelines, on-the job and formal training as component of field projects at country level, study tours, group training through seminars and workshops at international, regional or national level, expert consultations, regional commissions meetings, etc... ESS has also worked in the past with selected regional/international training institutions in Africa, Asia and Europe (Ecole Nationale de la Statistique et de l'Economie Appliquée-ENSEA in Abidjan, Statistical Institute for Asia and Pacific-Statistical Institute for Asia and Pacific-SIAP in Tokyo, the former Munich Center for advanced studies in statistics in Munich, the Institute of Social Studies, The Hague) to provide technical input and support to their continuing training programmes.

ESS has been also providing support to countries in the development of integrated systems of food and agriculture statistics. The results achieved show a wide diversity of situations from one region to another and from one country to another in the same region. However, some important lessons can be learned from this long and diversified experience.

This paper will review the experience of FAO Statistics Division's assistance in capacity building and development of integrated food and agriculture statistics systems with focus on African countries. It will analyze past experience and emerging trends and highlight some of the main issues and lessons learned for a successful capacity building programme. This paper is based on the author's involvement for more than a decade in formulation, supervision and technical backstopping of ESS technical cooperation activities as well as organization of group trainings, expert consultations and regional commission meetings.

1. INTRODUCTION

The domain of food and agriculture covers the complex interactions of physical, climatic, biological, economic and social processes in production, processing, distribution and utilization of food and agriculture commodities.

The essential features of the economic activities carried out by agricultural production units can be outlined with reference to the ISIC, the United Nations' International Standard Industrial Classification of all Economic Activities, which provides a framework for the international comparison of national statistics (FAO, 1986).

Major Division 1 of the ISIC, includes agriculture, forestry and fisheries and has the following structure:

Major Division 1	Agriculture, Hunting, Forestry and Fishing
Division 11	Agriculture and hunting
Major Group 111	Agricultural and livestock production
Major Group 112	Agricultural services
Major Group 113	Hunting, trapping and game propagation
Division 12	Forestry and logging
Major Group 121	Forestry
Major Group 122	Logging
Division 13	Fishing
Major Group 130	Fishing

The agricultural statistics system is a system which generates data on these domains. It also includes data on socio-economic characteristics of households and population engaged in the activities above.

Capacity building in agricultural statistics in the general understanding refers to strengthening the capacity of government institutions of agricultural statistics system to carry out their tasks on a sustainable basis to provide data on agriculture sector on a regular basis.

This paper will review FAO Statistics Division's experience in Africa Region with focus on a specific aspect of capacity building which concerns activities directed to strengthening and enhancing technical skills of national staff[1] in collecting, processing, analyzing and disseminating agriculture statistics. However, it is recognized that capacity building goes beyond providing technical skills to staff. In fact, sustainable improvements to the statistical systems require programs to increase both the demand for and the supply of statistics (Badiee and al, 2007). Such programs will have to address all areas of weakness including internal demand and use of statistics, funding and operational issues and other related issues necessary for institutional stability, sustainability of activities, staff incentives etc.... Nevertheless, the non availability of a critical mass of highly skilled staff and mechanisms for regular updating and upgrading is a major constraint in many African countries in food and agriculture statistics. High turn-over of staff, HIV/AIDS, instability of institutions are some of the factors contributing to this situation.

Building and strengthening technical capacity of national institutions in Food and Agriculture Statistics require adequate tools to address specific challenges related to the nature and variety of institutional framework across countries as well as profile of staff involved in agricultural statistics activities. In Africa Region, some countries have relatively centralized systems with

[1] The focus is mainly on technical and senior staff involved in planning, management and supervision of agricultural statistics activities.

National Statistical Offices in charge of producing all major official statistics including agricultural statistics while in other countries, Ministries of Agriculture through their Agricultural Statistics Units have a more important role in generating data on agriculture sector. The profiles of staff involved may include statisticians, agronomists, economists and staff with more or less related qualifications.

Therefore, there is a wide variety of capacity building needs ranging from basic statistical skills to more specialized skills. From the review of FAO capacity building experience, some lessons can be learned on relative effectiveness of activities and tools used.

2. REVIEW OF FAO CAPACITY BUILDING ACTIVITIES IN FOOD AND AGRICULTURAL STATISTICS

The mandate of FAO Statistics Division stipulates that the Division *"assembles, analyses and disseminates statistical data on world food and agriculture; cooperates with member countries in improving the coverage, consistency and quality of the data; provides advice and assistance to Member Governments to develop & improve food & agricultural statistics; and also provides technical supervision to the statisticians in the regional and sub-regional offices". (www.fao*

Within its mandate, FAO statistics Division (ESS), has been implementing capacity building activities in all regions and particularly in Africa Region over several decades using technical materials developed and through various modalities.

The main technical areas in which ESS has been most active in developing technical skills include:

- Agricultural censuses and survey methodology and techniques (including data collection, processing, analysis and dissemination)
- Supply/Utilization Accounts and Food Balance Sheets
- Methods of deriving Food Security Indicators from Household Surveys
- Agricultural Prices Methodology
- Framework for integration and dissemination of national Food and Agricultural Statistics through CountrySTAT platform
- Development of integrated food and agricultural statistics system

Several modalities have been used by ESS for conducting capacity building activities. Some activities are conducted as ESS normative work and are funded through FAO regular budget while others are conducted through projects and/or in partnership with other institutions.

The Division conducted recently an auto-evaluation of its Technical Support Services to Member Nations and the Field Programme for the period 1994/95 -2004/05 (FAO, 2006). The process included consultation with FAO staff in Headquarters and in regional offices as well as selected recipient Member Nation[2] representatives (Heads of National Agriculture Statistics Offices) through a survey using detailed questionnaire. The questionnaire was also sent to a representative sample of selected senior international consultants with field experience covering a wide range of countries in all major regions. The following review draws on findings of this auto-evaluation exercise as well as other relevant documentation and the personal experience of the author.

[2] Eleven responses were received, processed and analysed (both close responses and open comments were analysed). The geographical distribution of the respondents is as follow: Africa (4); Asia (2); Latin America and Caribbean (1); Eastern Europe (1); Near East (1); FAO Regional Office for Latin America and Caribbean (1)

- *Preparation and dissemination of technical documents on international norms, standards, methods to be used in Food and Agricultural Statistics*

In all major technical areas indicated above, ESS has developed methodological guidelines and regularly updated to serve as reference material for staff involved in food and agricultural statistics in countries as well as basis for group trainings. These documents are widely disseminated in the form of publications or through internet (see: http://www.fao.org/es/ess/). The most recent methodological documents include:

- Programme for the World Census of Agriculture 2010 (WCA2010)
- Conducting agricultural censuses and surveys
- Multiple frame agricultural surveys
- A system of economic accounts for food and agriculture
- Supply Utilization Accounts and Food Balance Sheets (SUA/FBS)
- FAO methodology for measuring food deprivation (and a process for deriving Food Security Indicators from Household Surveys)
- Guidelines for crop forecasting (working paper)
- CountrySTAT framework

The results of the auto-evaluation conducted by ESS shows that while these technical documents are highly appreciated in countries, there is a need to broaden the coverage to include new/emerging issues. The auto-evaluation noted that major changes are taking place in the agriculture sector and the rural world with issues of *poverty, food security, sustainable development, environment and gender* getting high priority on the policy agenda both at international and national levels. It was therefore recommended that FAO methodological work for assistance to national statistical systems should pay more attention to new data needs for these emerging policy issues. The activities should emphasize the *analysis and use of data and address issues related to improving data quality at country level.*

A more comprehensive coverage and an integrated approach are suggested to make linkages with other disciplines within the Organization. It was stressed that this should be done in the broader framework of MDGs that are of most relevance to FAO's mandate and within the overall statistical framework of countries. The assistance should aim at offering to countries modern technological packages that they can readily integrate in their planning frameworks including strategic planning of national systems of statistics and mainstreaming food and agriculture statistics in this process. This should be done in close collaboration with national authorities and other partners, in particular PARIS21 with whom the Division has already established working relations.

In this sense, it was recommended that specific methodological guidelines should be developed on these topics by the division. There is also a growing demand for advocacy material and handbooks with practical guidelines and some good practices to complement general guidelines and make the case for better support to agricultural statistics in countries.

In recent years, the decline in resources allocated to normative work has limited the division's capacity to undertake substantial methodological activities.

- *Group training (international/ regional/national), workshops, seminars, expert consultations, round table meetings and regional commission meetings.*

ESS has been conducting several types of group trainings as part of its capacity building activities, including:

- International, Regional and National Demonstration Centres on FAO methodologies for deriving Food Security Indicators from Household Income Expenditure Surveys results.
- National Training and workshops on Supply Utilisation Accounts and Food Balance Sheets
- Round table meetings on the world census programme,
- Expert consultations and technical workshops on statistics systems for food security and workshops on livestock statistics
- Regional commission meetings

These group training provide the opportunity to participants not only to learn more and new methods, but also to share there own experiences with other country participants.

An interesting experience is the Demonstration Centres on Food Security Indicators where participants bring their own data and re-process them during the training session in order to produce an analytical report. The objective of the training is to help countries in estimating food consumption indicators useful to policy makers in the planning of interventions for alleviating hunger and poverty among the population on the basis of statistical procedures for processing, computing and analyzing food consumption data collected in the Household Income Expenditure Surveys (HIES). The training activities target both participating individuals and institutions involved in collecting food consumption data on the processing and analysis of the most recent HIES food data. The training provides opportunities in report writing and dissemination of food security statistics among the national users and policy makers. Participants are expected to continue the preparation of similar reports once they are back in their countries.

Training in SUA/FBS conducted at country level have also been successful in some countries where staff trained was able to prepare and update FBS in following years (examples of Kenya and Senegal).

Regarding the Decennial Programme for World Census of Agriculture regional round table meetings are organised during each cycle for presentation and discussion of the new programme as well as countries own experience and views with the implementation of the guidelines in the programme. These round table meetings are appreciated by participants but the impact at country level will depend on the existence of plans to undertake a census (example of Burkina Faso).

Biennial Sessions of Regional Commissions on Agricultural Statistics are organised in all regions and are attended by heads of agricultural statistics. These Sessions provide the opportunity to update participants on new developments and share good practices. Recently FAO has developed on a pilot basis a system of indicators for monitoring the level and evolution of agricultural statistics capacity in countries. These indicators are updated at the occasion of the regional commission meetings and discussed during the sessions (see annex. 2).

Regional commissions have been useful in sharing country experiences and new or emerging tools and methods in agricultural statistics. In Africa Region, the organisation of a technical workshop back-to-back with African Commission on Agricultural Statistics (AFCAS) as broadened the participation to other stakeholders (policy makers, planners, NSOs, development partners). However, the impact at country level and the degree of implementation of recommendations is not known. Other activities include organisation of study tours, expert consultations and technical workshops on statistics systems for food security

Experience shows that well organised group training has a high potential to increase the skills of staff. However the impact in terms of sustained improvement of activities in the institutions will depend on the technical skills put to work since the skills may be lost after a certain period if

not put in practice. The results of the auto-evaluation reveal that group trainings in general were found relevant to the needs of countries. However its stressed the need to strengthen or put in place more effective follow-up mechanisms for the implementation of the skills acquired by participants. Therefore linking training to activities being implemented in countries is a good way of insuring that staff trained will implement the skills learned when they are back to their countries.

- *Partnership with regional training institutions and other regional institutions for continuing training*

In many French Speaking African countries, agricultural statistics are mainly produced through Statistical Units of line sector ministries (mainly Ministries of Agriculture) where most of the staff lack basic skills in statistics. In order to address this constraint ESS and the *"Ecole Nationale de la Statistique et de l'Economie Appliquée (ENSEA)*[3]*"* of Abidjan, Côte d'Ivoire, developed in the mid 1980's a training course targeted to staff performing agricultural statistics in these line ministries. The profile of these staff included mainly agronomists, agro-economists and staff with related qualification. This programme started with 9 month duration and intended to provide basic statistical skills and specialized training in agricultural statistics. The duration of the training Session was latter reduced to 3 months, given funding constraints and also availability of senior staff for a long period. Most of the participants were staff involved in agricultural statistics field projects which provided funding. Training was mainly conducted with lecturers from ENSEA faculty, staff from Statistical Offices in Côte d'Ivoire and FAO staff.

This programme was very successful and significantly enhanced the technical capacity of statistical offices in line ministries. The programme was very cost effective since it was conducted in an African country (often neighboring country) with socio-economic and agricultural characteristics similar to countries of participants. Training was also provided mainly by professionals and involved both theoretical courses and practical field experiences and participants were involved in similar activities in their countries and therefore, highly motivated to learn.
In fact most of the current senior staff in these ministries, including many Directors of Agricultural Statistics Services, have gone through this FAO/ENSEA training. This experience shows that well designed and targeted capacity building programme can have a significant impact on technical capacity of countries.

However, some of the constraints of this programme include:

- Reliance on project funding
- Political instability in Côte d'Ivoire
- Limitation to French speaking countries
- Need for continued updated and upgraded training material
- Need to invest more on Training of trainers
- Need to consider modern training mechanisms, including E-training
- Need to involve Universities, particularly in English Speaking Countries
- Need to link training to activities in countries and continuous follow-up and technical support
- A general question is whether group training (regional/international) should have priority in FAO activities or country level training

A comparable experience is being conducted in Asia with the United Nation Statistical Institute for Asia and Pacific (SIAP) (http://www.unsiap.or.jp/) and resulted in significant improvement in skills of national staff in statistics, including agricultural statistics. The Institute

[3] ENSEA is a regional training center which provides high-level degree education in statistics and applied economics (bachelor and master levels) to all African francophone countries south of the Sahara (http://www.ensea-ci.org/)
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organizes continuing training and upgrading, workshops and seminars and is supported by Japan and other Partners. The technical areas of training includes agricultural statistics in collaboration with FAO. The following inputs were provided by FAO:

- Senior Statistician from FAO Regional Office for Asia and Pacific was a member of the governing board of SIAP
- FAO Staff conducted lecture on specific agricultural Statistics topics
- Organisation of Joint FAO/SIAP workshops on specific topics such as Economic Accounts for Agriculture, Multiple Frame Agricultural Surveys, etc..

Other experiences include the partnership of ESS with the ex-Munich Center with FAO staff providing lectures on the Agricultural Statistics Modules. However, this Center which was supported by the European Union does not exist anymore and this type of training was discontinued.

In addition to regional training centers, presently several institutions are active in statistical development at regional and sub-regional level in Africa Region: ECA, AfDB, AFRISTAT, CILSS/Agrhymet, SADC, EAC. Also regional, sub-regional and national frameworks and strategies have been elaborated for statistical development in African Countries. Capacity building in Food and Agriculture Statistics should be a component of these existing frameworks and strategies and should be implemented in partnership and synergy with all active institutions, each one bringing its technical expertise in a coordinated and coherent way. A comprehensive capacity building programme in Food and Agriculture Statistics involving FAO and major regional/sub-regional institutions, particularly the regional training Centers and open to all countries may provide a coherent framework and resources needed for enhancing technical skills of national staff in Food and Agricultural Statistics over an adequate period (5-10 years).

- *Capacity building through field projects*

Over the years, the FAO Statistics Division has been implementing a large portfolio of field projects in African countries on their request with funding from UNDP, Trust Funds or FAO Regular Budget (Technical Cooperation Programme). The technical content of the projects draw to a large extent on normative work developed by ESS particularly:

- the World Programme for Census of Agriculture
- the Supply/Utilization accounts and Food Balance Sheets
- the methodological development and package for deriving indicators of food insecurity from Household Survey data.

Most of these field projects include capacity building activities ranging from day to day on the job training of national staff by experts and consultants to more formal in-country training sessions (ad-hoc or through existing training institutions). Many project staff also attend group training at regional or international level. ESS has effectively maintained synergy and balance between normative and operational work.

These field projects (2-3 years duration) have also been an important source of transfer of technical skills to national staff through learning by doing and interaction with consultants and experts. However this approach has its limits since statistical capacity building activities require longer gestation period and there is a trade-off to be made between producing project outputs in time (with less time devoted to training of staff) and putting more emphasis on training of national staff which take more time. Also more time and resources are required for developing skills of a critical mass of staff which cannot be adequately supported by short-term projects such as TCP interventions. Therefore, in addition to the usual assistance projects, the auto-evaluation of ESS

suggested that FAO should seek funding for specific projects/programmes focusing on capacity building (Trust Funds) and that regional and sub-regional perspective should be considered in these projects.

- *Development of integrated Food and Agricultural Statistics Systems as major component of National Statistics System*

Despite the importance of the agriculture sector in their economies and societies, Agricultural Statistics Systems in many African countries are among the weakest components of national statistical systems. The factors contributing to this situation have been analysed and discussed in several papers and forum. Most of the analysis point to the lack of integration of agriculture statistics within the sector and within the national system of statistics. In many countries, several institutions are producing data within the agriculture sector with no coordination (ministry of agriculture, livestock, fishery, forestry, development projects, etc). These sector statistical units are often isolated from the other institutions of the national statistical system and in particular the Central Statistical Office. With limited resources available, this situation contributes to weak capacity for producing agriculture statistics and poor quality data in many countries and ultimately to marginalization of the agriculture statistics system.

In the mid 90's FAO with the support of the World Bank has engaged a process of developing Integrated Food and Agriculture Statistics in many African Countries with the aim of better integration within the agriculture sector (Ghana, Madagascar, Guinea, Mali, Malawi, etc).

However, it appeared clearly that the issues at stake go beyond one sector statistics and must be addressed at national level. There was a need for a comprehensive review of the national statistical system as a whole and defining an appropriate strategy which will take into account sector components of the national system.

Therefore, as indicated in the Marrakech Action Plan for Statistics (MAPS), countries should, in the first place be encouraged and supported to prepare national strategies for the development of statistics (NSDS) aiming at better integration of all components of the statistical system and owned by countries. PARIS21 has prepared guidelines and has been assisting several countries in preparing their NSDS. However it appeared that these global guidelines needed to be complemented by additional guidelines for better integration of sector statistics within the process of NSDS. FAO has contributed to the preparation of these additional guidelines.

Future capacity building activities will need to be consistent with the country NSDS process and contribute to its implementation regarding agriculture statistics component. The auto-evaluation recommended that a high priority should be given to supporting strategic planning of national systems of statistics and mainstreaming food and agriculture statistics in this process in close collaboration with national authorities and other partners, in particular PARIS21.

3. CONCLUDING REMARKS AND ISSUES FOR DISCUSSION

Many of FAO Statistics Division's capacity building efforts of the past are delivering dividends at country level. Often senior staff in Agricultural Statistics Services were trained on FAO technical cooperation projects and through group training and partnership with regional training institutions of the 1970s, 1980s and 1990s. Another evidence is the increasing use of nationals from African countries as consultants and experts in ESS technical cooperation projects and programmes.

However, in the African Countries much capacity building initiative are faced with various constraints, including lack of national budgets to maintain the capacity, competition for personnel from the private sector, NGOs and emigration and, in some countries, the ravages of HIV Aids and other diseases. An absence of public sector reform also lowered the effectiveness of the limited resources available. While the need for support to capacity building remains high in many countries at the present time, however, the resources are not available. Actually, for a Programme of Capacity Building in Food and Agriculture Statistics to be effective, there must normally be a convergence of national demand, normative strength and donor interest.

What lessons can be learned for improved effectiveness of FAO Capacity Building activities?

The following points are some of the author's suggestions for discussion based on the above review and personal experience.

1. The current situation regarding FAO Statistics Division capacity building activities is characterized by a declining resource availability regarding regular budget allocations and significant changes taking place at country level with shift towards strategic planning and an increasing number of players. Therefore, there is a need of a revision of the content and modalities of ESS capacity building activities with focus on technical areas of recognized comparative advantage and emphasis on partnership with other development partners. The following points are proposed:
    - Develop framework and system with indicators for monitoring country capacity in food and agriculture statistics and use the results as basis for its assistance programme
    - Develop training tools (including e-training) and practical guidelines in addition to reference and methodological documents
    - Document and disseminate country experiences and best practices
    - Integrate more group training at international/regional level with country activities
    - Focus on training of trainers

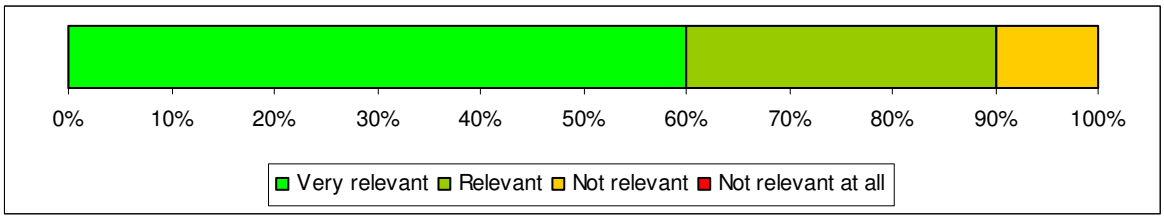
2. If FAO capacity building activities are to have a lasting impact in countries, they should be more and more aligned with statistical development strategies at regional and country level. FAO therefore should play a more active role in the development and implementation of sector components of NSDS at country level with emphasis on capacity building and better integration of agricultural statistics systems into national systems. Better advocacy and stronger linkages should be established between agricultural statistics programmes and systems for monitoring and evaluation (particularly impact and outcome indicators) of agriculture and rural development policies and programmes within Poverty Reduction and Food Security Strategies.

3. Experience shows that well designed continuing training programme implemented in partnership with regional training institutions with secured funding can have a clear impact in terms of countries capacity in food and agriculture statistics.

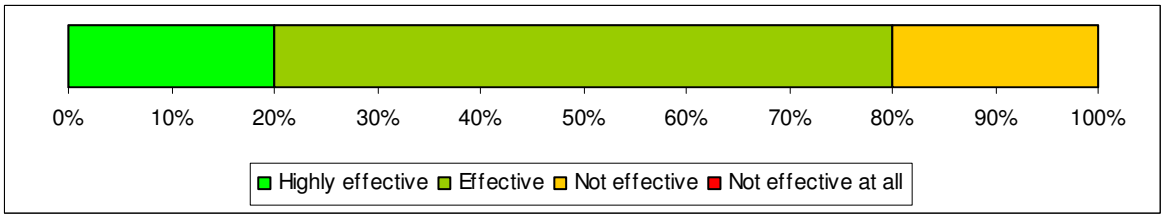
4. In order to address the funding issue of assistance to national agriculture statistics systems, as indicated by the auto-evaluation ESS should make efforts to build strategic alliances with national, regional and international institutions which could provide complementary services or funding or add value to the interventions of FAO projects.

ANNEX 1: Extract from the report on auto-evaluation of ESS Technical Cooperation and field Projects (results from survey)

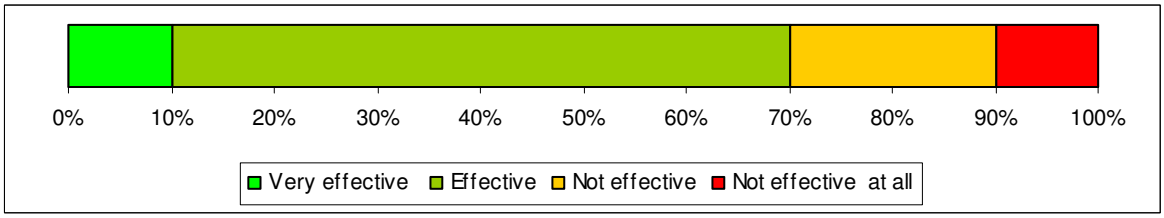
a) Relevance of capacity building activities (e.g. regional/country workshops, formal/informal training)



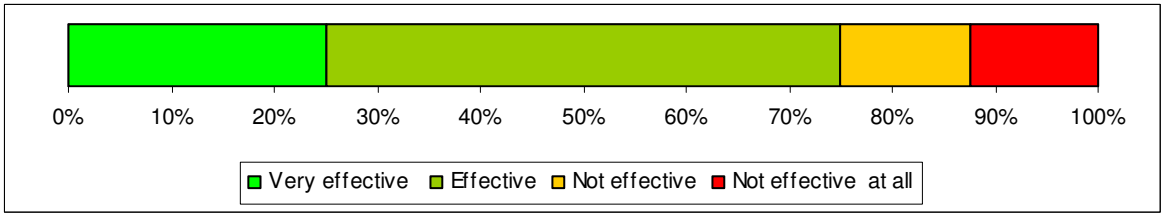
b) extent to which direct advice and assistance as well as field projects has led to improved institutional capacity in countries:



c) resources mobilized in favour of support to national statistical systems thanks to the programme entities:



d) degree to which the decline in the quality of data is being controlled or reversed in some countries of intervention:



MAIN SUBJECT COVERAGE FOR TECHNICAL ASSISTANCE PROJECTS

SUBJECT COVERAGE (project title)	80'	Biennium 90/91	Biennium 94/95	Biennium 00/01	Biennium 04/05
AGRIULTURE_CENSUS	53	45	63	65	48
DEVELOPMENT OF PERMANENT.SYSTEMS OF FOOD AND AGRICULTURE	41	45	26	12	45
STRATEGIC_PLANNING/CAPACITY BUILDING	0	0	5	0	6
OTHERS	6	10	11	23	1
TOTAL	100	100	100	100	100

ANNEX 2: The State of Food and Agricultural Statistical Systems in Africa

a) MAIN QUESTIONNAIRE ITEMS

Part 1: The organization of the Food and Agricultural Statistical System

1.1 Legal framework
1.2 Structure of the National Statistical System
1.3 Strategic framework
1.4 Dialogue with data users
1.5 Financial resources
1.6 Human resources

Part 2: The outputs of the Food and Agricultural Statistical System

2.1 Adoption of international classifications
2.2 Main censuses and surveys conducted
2.2.1 Agricultural censuses and surveys
2.2.2 Other main censuses and surveys
2.3 Availability and coverage of agricultural statistics
2.4 Availability of other statistics and indicators
2.5 National account statistics

ANNEX 1: Abbreviations

ANNEX 2: Main national institutions involved in the production of agricultural statistics ***(for each institution)***

A.2.1 Institution
A.2.1.1 Activities
A.2.1.2 Financial resources
A.2.1.3 Human resources
A.2.1.4 Information technology
A.2.1.5 International cooperation and external assistance

ANNEX 3: Main national food and agricultural censuses and surveys

A.3.1 Description
A.3.2 Data collection
A.3.3 Data processing
A.3.4 Data dissemination
A.3.5 Data quality

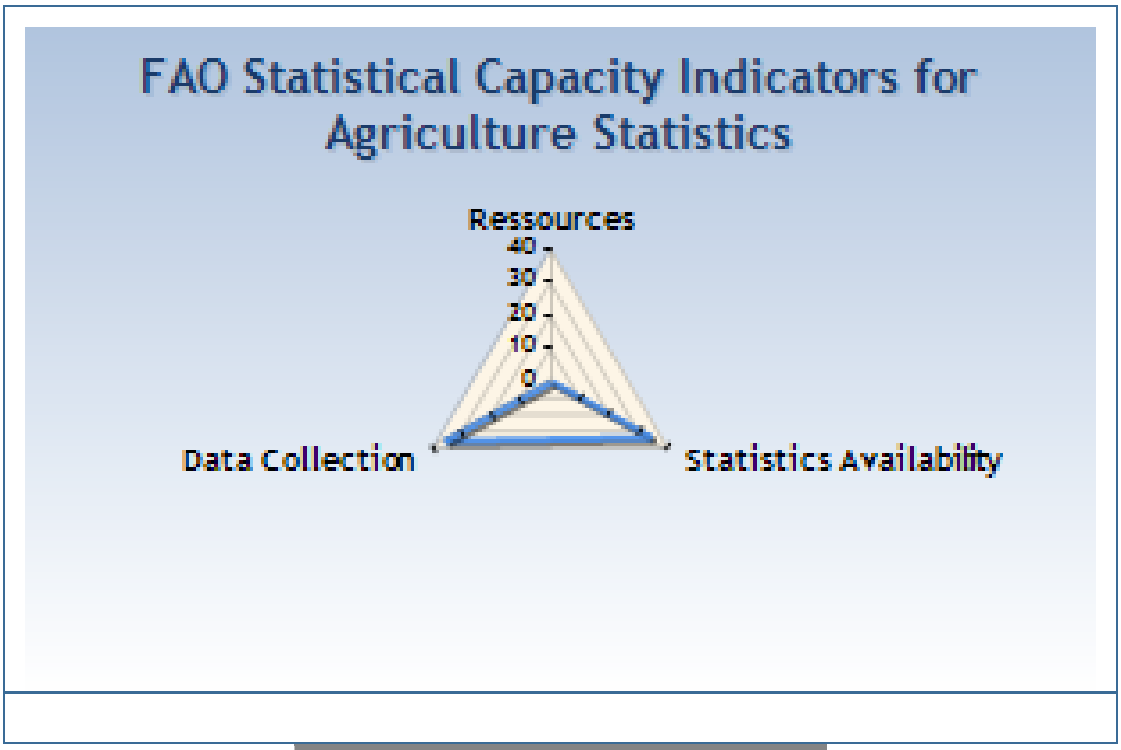
ANNEX 4: Main administrative sources on food and agricultural statistical information

A.4.1 Description of the data produced
A.4.2 Data collection and compilation
A.4.3 Data processing
A.4.4 Data dissemination
A.4.5 Data qualità

b) *FAO STATISTICAL CAPACITY INDICATORS*

Choose a country: -- List of countries -- **Choose a year:** 2005

Date :



FAO Statistical Capacity Indicators		
Indicators	**Country Rate**	**Maximum Rate**
Resources:	0	100
Statistics Availability:	34.4	100
Data Collection:	36.2	100

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