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Toward a Framework for Collaboration among Development Partners in National Accounts Programs

Partnership Model for the Implementation of Regional Statistical Programs: the Case of the International Comparison Program for Africa (ICP-Africa)

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Éditorial

Au cours des six derniers mois, différents événements et activités ont contribué à rehausser le profil des statistiques en Afrique. Tout d'abord, plusieurs réunions sur la comptabilité nationale ont été organisées pendant cette période. Une conférence de haut niveau sur « la divulgation des standards internationaux et la coordination dans le domaine des comptes nationaux pour une croissance durable et le développement » a été organisée à Luxembourg du 6 au 8 mai 2008 avec pour objectif de faciliter la divulgation du système de comptabilité national (SCN) et la coordination internationale dans le but d'améliorer l'utilisation des méthodologies harmonisées. La Banque africaine de développement (BAD) en tant que co-organisatrice de la conférence s'est assurée que la voix africaine soit entendue en aidant plusieurs pays africains à être représentés à la conférence. Un article est publié dans ce volume, proposant un cadre pour établir un mécanisme efficace de coordination parmi les partenaires au développement pour l'appui à l'élaboration des comptes nationaux en Afrique. Après sa première réunion à Lusaka, Zambie en avril 2008, le Groupe africain de comptabilité national (GACN) établi par la Commission statistique pour l'Afrique (StatCom-Afrique) a tenu une deuxième réunion à Tunis, Tunisie du 2 au 4 juillet 2008 pour préparer une stratégie de mise en oeuvre en Afrique du SCN révisé. La stratégie est dans sa phase de conceptualisation et couvrira la période 2009-2013. Le compte rendu de la deuxième réunion du GACN est présenté en ce volume.

En second lieu, la Banque africaine de développement a accueilli à Tunis, du 9 au 12 septembre 2008 une série de réunions sur la coordination des activités statistiques aussi bien au niveau mondial que régional. La 12ème session du Comité pour la coordination des activités statistiques (CCAS) a rassemblé toutes les agences de l'ONU, la Banque mondiale, le FMI, les agences bilatérales et les organismes régionaux et sous-régionaux impliqués dans le développement des statistiques dans le monde. C'était la première fois que le CCAS se réunissait en Afrique. La réunion du CCAS a été précédée par la troisième réunion du Comité africain de coordination statistique (CACS) qui a rassemblé les représentants de la Fondation africaine pour le renforcement des capacités (ACBF), d'AFRISTAT, de la BAD, de la Commission de l'Union Africaine (CUA), et de la Commission économique des Nations Unies pour l'Afrique (CEA) aussi bien que le statisticien général de l'Afrique du Sud et le conseiller du directeur général de l'Institut national de la statistique du Niger. Les deux réunions ont donné l'opportunité d'améliorer les synergies dans les diverses activités effectuées

par les organismes internationaux et régionaux. Par conséquent elles ont contribué à accroître l'efficacité dans la fourniture de l'assistance aux pays dans le domaine du renforcement des capacités statistiques nécessaires pour une meilleure mesure de résultats de développement, le suivi des OMD et l'établissement des rapports. Le communiqué de la troisième réunion du CACS est présenté dans cette édition.

Ce volume présente différents thèmes sur le renforcement des capacités statistiques en Afrique. Il contient un article sur une meilleure prise en compte des systèmes statistiques sectoriels dans les stratégies nationales pour le développement de la statistique (SNDS). Celui-ci fait la description du cadre visant à incorporer plus efficacement des aspects sectoriels dans les systèmes statistiques nationaux. Un des articles présente un modèle de partenariat pour la mise en oeuvre des programmes statistiques régionaux basés sur l'expérience de l'exécution du programme PCI-Afrique. Y sont présentés les principes fondamentaux de partenariat qui sont les piliers dans la création de synergie parmi les institutions collaboratrices et dans la durabilité du processus de partenariat dans son ensemble.

Un autre article présente quelques mesures visant à répondre aux défis auxquels les pays africains font face dans la production et l'utilisation de l'information sexospécifique pour l'appui aux efforts de développement. L'article fait le tour de quelques aspects relatifs à son intégration dans le processus statistique tout en soulignant les efforts menés par certains intervenants africains en ce sens. Un papier sur l'amélioration des statistiques rurales et agricoles met l'accent sur le choix des indicateurs en utilisant le cadre logique. Deux autres articles sur le renforcement de capacité statistique abordent des questions relatives (i) à la formation de jeunes statisticiens pour le développement des statistiques en Afrique et (ii) aux forces, faiblesses et options pour améliorer le cadre de la Banque mondiale pour la mesure de capacité statistique. Un autre article technique présente une méthodologie en cours d'élaboration pour calculer un indice composite du progrès vers les OMD.

Finalement, l'Afrique du Sud accueillera en août 2009 la cinquante-septième session de l'Institut International de Statistique (IIS). À cette occasion, les principaux responsables statisticiens dans le monde se rencontreront pour partager la connaissance, discuter et considérer les progrès réalisés et les défis relevés dans l'arène statistique mondiale. La cinquante-septième

session de l'IIS promet d'être une conférence mémorable; non seulement pour son organisation efficace, mais également pour les conséquences de grande envergure qu'elle entraînera en termes de changement de la façon dont l'Afrique est perçue dans la communauté statistique internationale. Ce volume contient des informations sur les préparatifs et l'organisation de la cinquante-septième session de l'IIS. Nous encourageons nos lecteurs à faire des plans pour participer massivement à cet important événement.

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Editorial

During the past six months, different events and activities have contributed towards raising the profile of statistics in Africa. First, several meetings on national accounts were organized during this period. An international conference on the "International Outreach and Coordination in National Accounts for Sustainable Growth and Development" was organized in Luxembourg from May 6-8, 2008 with the objective of facilitating the outreach of the System of National Accounts (SNA) and international coordination to improve implementation of harmonized methodologies. The African Development Bank (AfDB) as a co-organizer of the conference ensured that the African voice was heard by assisting several African countries to be represented at the conference. A paper is published in this volume, proposing a framework for establishing an effective coordination mechanism among development partners for support to the compilation of national accounts in Africa. After its first meeting in Lusaka, Zambia in April 2008, the African Group on National Accounts (AGNA) established under the Statistical Commission for Africa (StatCom-Africa) held a second meeting in Tunis, Tunisia from July 2-4, 2008 to prepare a strategy for the implementation of the revised SNA in Africa. The strategy is in its conceptualization phase and will cover the period 2009-2013. The proceedings of the second AGNA meeting are published in this volume.

Second, the African Development Bank hosted a series of meetings in Tunis, from September 9-12, 2008 on coordination of statistical activities at the global level as well as within Africa. The 12th session of the Committee for the Coordination of Statistical Activities (CCSA) brought together all UN Agencies, The World Bank, IMF, bilateral agencies and regional and subregional organizations involved in the development of statistics in the world. This was the first time the CCSA had met in Africa. The CCSA meeting was preceded by the third meeting of the African Statistical Coordination Committee (ASCC) which was attended by representatives from the African Capacity Building Foundation (ACBF), the AfDB, AFRISTAT, the African Union Commission (AUC), and the United Nations Economic Commission for Africa (UNECA) as well as the Statistician General of South Africa and the Advisor to the Director General of the National Statistical Institute of Niger. The two meetings offered an opportunity for improving synergies among the various activities

being carried out by international and regional organizations, and hence for increasing efficiency and cost effectiveness in the delivery of statistical capacity building assistance to countries for improved development results measurement, MDG monitoring and reporting. The Communiqué on the third ASCC meeting is included in this edition.

This volume presents different themes on statistical capacity building in Africa. It includes a paper on mainstreaming sectoral statistical systems into the National Strategies for the Development of Statistics (NSDS). The paper describes a framework aimed at more effectively incorporating sector issues in national statistical systems. One of the papers presents a Partnership Model for the implementation of regional statistical programs based on the ICP-Africa program implementation experience. Fundamental partnership principles, which are the pillars of creating synergy among the collaborating institutions and ensuring the sustainability of the whole partnership process, are presented.

Another paper presents selected measures aimed at addressing the challenges facing African countries in the production and use of gender-sensitive information in support of their development efforts. The paper highlights some aspects of engendering statistical processes and underlines ongoing efforts by African stakeholders in this respect. A paper on improving rural and agricultural statistics focuses on the selection of indicators using the logical framework. Two other papers on statistical capacity building address issues relating to (i) training young statisticians for the development of statistics in Africa and (ii) strengths, weaknesses, and options for improving the World Bank's framework for statistical capacity measurement. Another technical paper presents a methodology being developed for computing a progress composite MDG Index.

Finally, South Africa will host the 57th Session of the International Statistical Institute (ISI) in August 2009. On this occasion, the world's leading statisticians will convene to share knowledge, debate and ponder on advancements made and challenges faced in the global statistical arena. The 57th Session of the ISI promises to be a memorable conference; not only for its smooth execution, but for the far-reaching consequences it will have in terms of changing how Africa features in the international statistical

community. This volume includes information on the preparations and organization of the 57th Session of the ISI. We encourage our readers to make plans to attend this important event in large numbers.

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Abbreviations

ACBF	African Capacity Building Foundation
ACGS	African Center for Gender and Social Development
AfDB	African Development Bank
AFRISTAT	The Economic and Statistical Observatory of Sub-Saharan Africa
AGDI	African Gender and Development Index
AGNA	African Group on National Accounts
ASCC	African Statistical Coordination Committee
AUC	African Union Commission
AWPS	African Women's Progress Scoreboard
BOS	Bureau of Statistics
CCSA	Committee for the Coordination of Statistical Activities
CEDAW	Convention on the Elimination of Discrimination Against Women
CMI	Composite MDG Index
COMESA	Common Market for Eastern and Southern Africa
CPI	Consumer Price Index
CSO	Civil Society Organization
DP	Development Partner
ECCAS	Economic Community of Central African States
ECOWAS	Economic Community of West African States
ESCAP	Economic and Social Commission for Asia and the Pacific (UN)
FAO	Food and Agriculture Organization
GDP	Gross Domestic Product
GESNET	Gender Statistics Network
GSI	Gender Status Index
HR	Human Resources
IAEG	Inter Agency and Expert Group
ICP	International Comparison Program
ICT	Information Communications Technology
ILO	International Labor Organization
IMF	International Monetary Fund
INSEE	Institut National de la Statistisque et des Etudes Economiques
ISI	International Statistical Institute
LIFDC	Low-Income Food-Deficit Country
M&E	Monitoring & Evaluation
MCMC	Markov Chain Monte Carlo method
MDG	Millennium Development Goal
NA	National Accounts

NEPAD	New Partnership for Africa's Development
NGO	Non-Government Organization
NSDS	National Strategy for the Development of Statistics
NSO	National Statistical Office
NSS	National Statistical System
OECD	Organization for Economic Cooperation and Development
PARIS21	Partnership in Statistics for Development in the 21st Century
P-CMI	Progress Composite MDG Index
PDPs	Participating Development Partners
PHC	Population and Housing Censuses
PNSD	Plan for National Statistical Development
PPPs	Purchasing Power Parities
PRSP	Poverty Reduction Strategy Paper
RMCs	Regional Member Countries
RRSF	Reference Regional Statistical Framework
SADC	Southern Africa Development Community
SMP	Statistical Master Plan
SNA	System of National Accounts
SPAPGA	Statistics Partnership among Academe, Private Sector and Government in Africa
SSDS	Sectoral Strategy for the Development of Statistics
SSPS	Sector Strategy Plans for Statistics (Uganda)
STATCOM-Africa	Statistical Commission for Africa
STC	Statistical Training Center
STPA	Statistical Training Program for Africa
TA	Technical Assistance
TOR	Terms of Reference
TUS	Time-Use Survey
UBOS	Uganda Bureau of Statistics
UEMOA	West African Economic and Monetary Union
UNECA	United Nations Economic Commission for Africa
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
UNESCO	United Nations Education, Science and Culture Organization
UNSD	United Nations Statistics Division
WB	World Bank
WHO	World Health Organization

Toward a Framework for Collaboration among Development Partners in National Accounts Programs

Michel Mouyelo-Katoula[1] and Adalbert Nshimyumuremyi[2]

Abstract

The revised System of National Accounts (SNA) is complex and demanding in terms of the variety of different data sources that must be tapped, developed, and channeled into a regular, institutionalized process of statistical reporting. Some African national statistical offices (NSOs) do not have the breadth or depth of expertise to maintain and enhance such data flows, while programs for national data development often lack a coherent, long-term, thematic structure. Many countries have had to respond to various ad hoc and contingent demands emanating from different sources. There are several ongoing initiatives in the development of statistics in Africa, including National Accounts, in which different Development Partners (DPs) are involved. This paper proposes a framework for establishing an effective coordination mechanism among DPs to support the compilation of NA in Africa in order to avoid duplication of efforts and adhere to the Paris Declaration on Aid Effectiveness.

Key Words: *Coordination, Harmonization, Partnership, SNA implementation*

Résumé

Le nouveau Système de comptabilité nationale parait complexe et exigeant, en termes de variété des sources de données à exploiter, développer et canaliser dans un processus de production statistique régulier et mieux institutionnalisé. Certains instituts africains de la statistique manquent tant l'étendue que la pertinence de l'expertise nécessaire pour entretenir et accroître de tels flux de données. Les programmes de développement des statistiques nationales ne sont pas toujours orientés vers une structure thématique des données, dans une logique de long terme. Plusieurs pays doivent répondre plutôt à diverses demandes 'ad-hoc' émanant de différentes origines sur les besoins de l'heure. Diverses initiatives sont en cours dans le développement des statistiques en Afrique, notamment en comptabilité nationale, pour lesquels différents partenaires au développement interviennent. Cet article propose un cadre pour l'établissement d'un mécanisme efficace de coordination entre les différents acteurs dans leur appui à la compilation des comptes nationaux en Afrique, afin d'éviter la

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duplication des efforts en suivant les recommandations de la déclaration de Paris sur l'efficacité de l'aide.

Mots clés : *Coordination, Harmonisation, Partenariat, Mise en œuvre du SCN*

1.   BACKGROUND

On the initiative of the African Development Bank (AfDB), and acting in its capacity as Global Office for the International Comparison Program (ICP), the World Bank (WB) organized two meetings in Washington DC in October-November 2007. The focus was on statistical discrepancies in 2005 GDP estimates compiled for 48 African countries participating in the ICP-Africa and in IMF estimates for the same year. The meetings sought to examine the 2005 GDP data available in the databases of each institution in each of the countries. The objective was to determine a framework for technical collaboration in order to achieve harmonization across all the various databases. In this way, the meetings represented the first step toward creating a collaborative framework among DPs for NA programs in Africa. The aim of this paper reinforces this approach by proposing some operational modalities for an effective coordination mechanism among DPs to support the compilation of NA in Africa.

2.   UNDERSTANDING THE PROBLEM

The contribution of SNA 93 in implementing a harmonized data system with standard classifications and in establishing consistent concepts for GDP measurement is crucial to the operational application of theoretical economic assumptions. The new institutional structuring and integration of balance sheets and full reconciliation accounts into the system ensure greater consistency with identified economic flows and transactions. In this way, SNA 93 contributes to an enhanced understanding of macroeconomic interactions.

The revised System of National Accounts is complex and demanding in terms of the variety of different data sources that must be tapped, developed, and channeled to build a regular, institutionalized process of statistical reporting. Some African statistical offices do not have the breadth or depth of expertise to maintain and enhance such data flows.

To build up appropriate databases to meet statistical imperatives, countries need special help; primarily to gain a complete and thorough understanding of concepts, definitions, and classifications in the SNA 93. In this respect, the correct application of the production boundary, as defined in the SNA 93, is key to the compilation of NA.

The next step would be to consolidate national accounts based on the existing sources of data (filling gaps where they are significant). Only when the available data sources have been optimally used, and the gaps in the coverage of the NA (especially with regard to the production boundary) have been filled, should countries move to the extension of the other accounts recommended in the SNA 93.

Programs for national data development have not always centered on a coherent, long-term, thematic data structure. Many countries have had to respond to various ad hoc and contingent demands placed upon them from different sources. There is a need to establish an effective coordination mechanism among DPs to support the compilation of NA in Africa. In this respect it is also important for DPs to adhere to the principles of the Paris Declaration on Aid Effectiveness, to strategically align their donor activities, and avoid duplication of effort.

3.   BASIC PRINCIPLES FOR PARTNERSHIP IN NATIONAL ACCOUNTS

This paper concentrates on the technical aspects of a framework for collaboration among DPs, including subregional, regional, and international organizations. This framework is to be based on a common understanding of the following issues:

1. The System of National Accounts (SNA) is the reference framework (concepts, completeness, quality assurance, consistency, geographical coverage, timeframe, etc.) for the development and the harmonization of NA in African countries;

2. The NA structure and logic must be reflected in the organization of the statistical activities in the African countries and within the framework of the countries' National Strategy for the Development of Statistics (NSDS). This should cover different dimensions:
   — To promote harmonization of the entire National Statistical System (NSS) toward a comprehensive compilation of NA in Africa;

— To recognize the agencies in charge of the compilation of NA in the African countries (mainly the NSOs but not exclusively) as sole and primary source and/or portal for NA, to dissuade partners from establishing competing/conflicting/duplicating NA units in a country, and from externalizing the production of NA estimates outside these national agencies;

— To stress the need for African NSOs to organize themselves as integrated NA compilation units;

— To encourage a multidisciplinary approach in the review and the validation processes of the NA as well as for training in NA.

3. The support given to statistics in the African countries by all the partners in terms of surveys, censuses, capacity building, etc. must be geared toward the compilation of the NA. Particular attention should be paid to the different surveys – designed and promoted by various institutions and DPs – that are carried out by African countries as primary sources in the compilation of NA.

4. A location for the unique data and metadata portal for African NA needs to be agreed upon. Any individuals or organizations interested in African NA statistics should have access to such a portal, which would be considered as the unique African reference database. Based on the ICP-Africa's country network, experience, and leadership in NA, it is proposed that this Africa reference database should be hosted by the AfDB. The development and the availability of methodologies, evolving in parallel with the availability of the data, would considerably facilitate their use both inside and outside the region. Furthermore, the regular review and validation process to be developed would safeguard the quality of the information posted under the unique NA portal.

The institutional coordination mechanisms will need to be defined and implemented jointly by the participating institutions. Three main levels of coordination should be covered:

1. *Administrative/Institutional:* a follow-up/steering committee/working group gathering officials from the Participating Development Partners (PDPs) should be established;

2. *Geographical:* to ensure coordination at the African level through the African Statistical Coordination Committee;

3. *Implementation/Technical:* to guarantee a timely information exchange among the PDPs on their respective roles. This should include the Terms of Reference (TOR) for activities that will inform the decision of others to participate in their respective programs.

On a case-by-case basis, the PDPs may consider formalizing their collaboration on a bilateral and/or multilateral basis. The coordination process will also be open to other institutions and agencies who express a willingness to join. Monitoring tools will be needed to assess the concrete impacts of the collaborative process on NA in the African countries.

The following basic and fundamental principles should guide the content and structure of the PDP partnership:

• To avoid duplication of effort, create synergies, and adhere to the principles of the Paris Declaration on Aid Effectiveness. There are several ongoing initiatives in the development of statistics, including NA in Africa, involving different actors. It is essential for PDPs to acknowledge what already exists in order to avoid reinventing the wheel. A major effort should therefore be directed toward assessing the existing mechanisms and the strengths and weaknesses of the various partners.
• To be sustainable, the proposed strategies and processes have to be realistic and consistent with national priorities and the NSDS.
• The proposed strategies also need to be fully congruent with the UN fundamental principles of official statistics.

The scope of the collaboration encompasses three main issues:

1. Improvement in the availability of NA estimates in RMCs;

2. Coordination and the optimization of the technical and financial support that the PDPs provide to the African countries;

3. Identification of statistical training needs for NA in Africa and a common strategy to strengthen coordination between the NSOs and statistical training centers.

These three interrelated issues are presented in detail in section 4 below.

The first issue concerns more specifically: (i) GDP estimates and some key NA aggregates for the reference year N-2, decomposed by main uses and

activity branches at market prices; (ii) Provisional estimates for key aggregates for the reference year N-1 and preliminary estimates for N. These objectives and their related technical and operational processes need to be guided by the following imperatives:

- The data to be used internationally should be produced and validated by the countries themselves;
- The calendar and obligations of the IMF necessitate preparation of final GDP estimates for April N+2 at the latest.

4   OPERATIONAL APPROACH

This section details the operational steps to be taken to achieve the objectives cited above.

4.1   Data and metadata production and validation cycle

Two main outputs are expected from the African countries: (i) regular GDP estimates and other key NA aggregates, and (ii) detailed methodological notes on the production of NA. To ensure the availability of these two outputs by April of each year, a cyclical and iterative process needs to be set up for the production and validation of the NA estimates and metadata. This process should be regulated by fixed benchmarks. A core benchmark would be the venue for the regional and/or subregional workshop(s), to be organized in March of each year. This should be supported by earlier efforts on the rationalization of metadata and the development of a unique NA portal. The process is composed of two types of milestones:

1. Some are *cyclical*, meaning that they are part of an annual cycle and that each year at the same period, specific tasks/events/outputs are systematically expected;

2. Others are *punctual*, meaning that efforts would need to be concentrated at the beginning of the work. They would not have to be repeated but might require regular monitoring.

4.1.1 Cyclical milestones

March: Review & Validation Workshop

A multilateral validation approach, like the one adopted by the AfDB for the ICP-Africa program, is proposed. This would be carried out at three operational levels:

1. *NA users* both in the countries and from outside, e.g. from government agencies, the academic world, and the private sector;

2. *The peers*, each country making its data and methods available to others;

3. *The national technical experts*, who will be mobilized by the PDPs as well as from other international and regional agencies.

The idea is to bring countries together, in March of each year, ideally at both a regional (the whole of Africa) level and at subregional level (African countries grouped according to geographical or technical criteria). The agenda of the workshop would be to review and discuss the NA accounts and tables that they have produced, as well as the ongoing work on the metadata rationalization. International agencies would facilitate the review process by contributing their technical expertise, and by commenting on the data and metadata provided by the countries. They would also be asked to provide joint support to subregional organizations, who would offer technical assistance (TA) to the countries. Users from different countries would also be mobilized in this process.

This gathering, in form of a regional workshop with 2-3 country representatives, following subregional meetings, would have the following objectives:

- To review the level of development of the NA estimates and of the metadata provided by the African countries;
- To assess the situation of each country;
- To make recommendations and to identify steps to improve the situation in each country.

With regard to the subregional meetings, having smaller groups of countries facilitates in-depth work and discussions. It is envisioned that these would lead to (i) compilation of a list of proposed activities and/or national work programs to be implemented by the countries and (ii) the

identification of the kind of TA needed from PDPs. Five to six subregional workshops per year are envisaged. These could be organized with the support of the statistical departments of the African subregional and regional organizations.[3] Country teams will be expected to come prepared to the workshops with their data files, aggregate estimates, forecasts, and other materials. Also, questions to be raised for discussion during the proceedings would need to be determined in advance. Detailed information on the material to be prepared for the workshops should be communicated in a timely fashion to the countries concerned.

March + 15 days: National formal validation

At the end of the Review & Validation Workshop, countries would return to their authorities with technically validated data. Countries have to commit to the fact that 15 days after the March regional workshop, the NA will be deemed to represent official estimates and sent for uploading onto the unique NA data portal. Also, countries should endeavor to upload NA data onto their own websites.

April: Data Online

Once countries have delivered their NA data, it will be immediately uploaded to a unique data portal, at the latest one month after the Review & Validation Workshop. Exchange protocols should normally allow an automated upload process. Nevertheless, minimum human intervention could be envisaged for the NA data portal maintenance. This work would most probably be the responsibility of the organization that will host and manage the portal.

Year long: Technical Assistance

Technical assistance (TA) can be subdivided into four categories according to its purpose:

1. *TA to prepare country materials for the Review & Validation Workshop.* As mentioned earlier, countries will be obliged to come fully prepared to the March workshop with their files, aggregates estimates and forecasts, metadata, and questions, etc. If requested by the countries, a TA mission could be carried out beforehand, in January–February, to support RMCs in the collection and preparation of the necessary workshop materials.

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[3] The main subregional economic communities recognized by the African Union Commission (AUC) are COMESA, ECCAS, ECOWAS, UEMOA, and SADC.

2. *TA to support the implementation of the March workshop recommendations.* The objectives of the Review & Validation Workshop are (i) to assess the situation of each country and (ii) to make recommendations and identify steps to be followed for the improvement of the aggregates (data and metadata) in each country. Therefore the outcome could be the identification of countries' TA needs. This outcome could be used as a TOR for missions to be jointly approved and implemented by the PDPs.

3. *TA to subregional organizations:* To establish vibrant statistical units in their respective secretariats.

4. *TA to Statistical Training Centers:* To establish NA training programs for both students and staff involved in statistical production.

These four types of technical assistance could be subject to one or two expert missions, depending on the topics to be treated.

4.1.2 "Punctual steps"

List of the key NA aggregates
The PDPs would need to jointly agree on a list of key NA estimates on which the whole production and validation process would be based. As already stated, it is crucial for each DP to refrain from establishing competing/conflicting/duplicating NA units in a country, as well as to desist from externalizing the production of NA estimates.

In order to determine the key NA outputs, the following steps should be taken:

- Identify core elements for the characterization of the estimates (economic agents, producing units, core goods and services, sectors, etc.);
- Define common estimation methods;
- Define a benchmark for the data and metadata files to be prepared for the March workshop;
- Prepare pedagogic materials detailing the types of tables/data needed for the calculation of the selected estimates and the processes to be followed. These materials will be useful for the countries when preparing their files for the March workshop.

Metadata systems

The lack of metadata for most of the aggregates is a real concern for many African countries and impedes improvement in the quality and availability of the NA aggregates. For each country, metadata systems need to be rationalized and regularly updated. National metadata compendia should be readily available and a country benchmark report should be formulated, subject to regular revision. It is proposed that this be done primarily within the framework of the March Review & Validation Workshop.

A unique portal for NA and metadata

There is a need to have a single data entry/portal for the NA aggregates estimates and forecasts. An NA database should be developed to house the aggregates validated by the countries. This database should be widely accessible and regularly and systematically updated.

4.2.   Coordination and optimization of the support to NA

Two main outputs are expected regarding this objective:

- *From the PDPs:* To optimize or jointly organize their respective NA support in Africa;
- *From the African countries:* To build up an integrated and optimized information system conducive to the production of quality and comparable NA estimates.

Mutual information on programs and plans to support NA in Africa

To improve the coordination between the PDPs and to maximize their respective efforts, a complete knowledge of their operations is needed. Indeed, this is essential for PDPs that provide direct support to a country.

In the short term, a mechanism to ensure a timely exchange of information on NA activities should first be established. Sufficient time between the announcement of an operation and implementation would be required, to give each partner time to respond or possibly to collaborate in the effort. A shared calendar of operations is a potential tool to contribute to this exchange of information.

In the long term, PDPs might consider having a common work program for NA, in which activities to be implemented in African countries are jointly identified and their implementation is allocated to the partners, through mutual agreement. The planning, implementation, and monitoring of

a common work program would have to be entrusted to a coordination body.

Complete review of the sources for the NA

A complete review of existing NA sources is needed. This review should cover all sources, both statistical and administrative. Among the statistical sources, some have been developed with the financial and technical support of international organizations.

For these statistical sources, and more particularly for the surveys, an in-depth analysis should be undertaken, to try to optimize their potential for NA. This analysis should focus on the organization of the surveys, their content, and final outputs. Their potential and relevance for feeding into the compilation of NA should be assessed thoroughly. If necessary, the surveys/questionnaires could be revised to make them more responsive to NA needs.

Integration of source outputs in the NA system

Once all the sources and their contribution to the compilation of the NA have been analyzed, the resultant information needs to be organized. This requires a framework to identify and support data flows from the sources into the NA system. This information system would serve as a template for partner institutions to build a common approach for supporting NA in the African countries. The system could later be developed for all the African countries, taking into account the specificities of their national contexts.

Promotion of NA in African countries

This approach, which focuses on the coordination and optimization of PDP efforts, is only feasible if the System of National Accounts is understood and fully mastered by each African country. This task cannot be left solely to national statisticians, particularly the ones who build the national accounts. The use of the SNA 1993 requires contributions from a larger number of partners, both inside and outside the NSOs. All the partners who directly or indirectly contribute to the NA need to be involved in the promotion of the system and in the related training programs. This aspect is further elaborated in the next section.

4.3. Joint training strategy

This section proposes a partnership strategy for training, with some concrete and detailed actions that will contribute to the capacity building of African countries in the field of NA.

Global framework
The global engagement of the PDP partnership in the field of training should be fully consistent with:

- The National Statistical Development Strategy (NSDS), to be considered as the national framework that defines national priorities and which favors the convergence of national statistical systems toward the compilation of the NA;
- The 1993 System of National Accounts, to be considered as the universal methodological reference framework.

Objectives
The specific objectives of the partnership in the field of training are two-fold: (i) to arrive at a common and comprehensive answer to statistical training needs; and (ii) to strengthen the coordination between the NSOs and the Statistical Training Centers (STCs).

Strategic approach
The expected outcomes of the strategic approach to training are:

- To propose curricula that are better adapted to training needs;
- To extend the NA training coverage at national and sector levels;
- To improve the coordination between the NSOs and the STCs.

Better solutions to statistical training needs in Africa
National accounts are part of the curricula in most statistics and economics training institutions. However, NA is never addressed as an issue in itself. In addition, training in NA tends to be highly theoretical, with little attention paid to the practices in NA compilation. When taught by statisticians, NA is depicted only as a statistical framework; whereas when taught by economists, NA is reduced to a model for the representation of a national economy. Few NA practitioners are involved in the design and the delivery of the existing curricula, at regional or national levels.

The revision of the NA training curricula has to rely on a comprehensive training needs assessment. Training needs in the field of NA have to be

correctly and objectively identified. In each country, this needs assessment has to be made both at the level of the NSO, as the primary source of demand for NA training, and at the level of the entire National Statistical System. The assessment has to be fully consistent with the reality in the African countries and has to respond adequately to the priorities identified in the NSDS. In parallel, training supply in the field of NA has to be assessed within both statistical and economics curricula. This assessment must be as complete as possible and must encompass all types of training delivered by the international organizations, the various subregional and national statistical training centers, the NSOs, and universities.

To be comprehensive, the identification and the derived analysis and proposals need to cover three interrelated dimensions: (i) the regional level (STCs), (ii) the national level (national training centers), and (iii) the NSS/NSO level.

An analysis of the supply and demand for training will help to highlight existing gaps in provision. It will provide solid elements for the revision, where needed, of statistical and economics training curricula. Without preempting the identification outcomes, one might suggest that curricula revision and/or creation should be articulated around four types of training courses, to be fully developed after completion of the identification process:

1. *General training courses:* Such training would target a large public, from NSO staff involved or not in the elaboration of NA, to other administration staff directly or indirectly working on NA sources. The objective of this general training course would be to create a large "National Accounts culture" at country level. An e-learning tool might be a good approach to promote NA concepts and methods. The IT infrastructures should be assessed too, as they have to meet the minimum requirements to ensure a successful e-learning process.

2. *Practical training courses:* From the needs assessments, specific practical problems encountered by national accountants will be identified. To answer a practical problem/need, there should be a practical training course proposal/answer. For example, to the question "How to build up products/outputs accounts?" the best solution might be on-the-job training. Another possibility would be to "subcontract" this question to an STC, which will then use it as a practical example in its curriculum.

3. *Highly specialized training courses:* These would target national accountants who have to deal with highly technical issues. For example, the valuation modes of government expenditure could be considered as an issue requiring a highly specialized training course.

4. *An annual Review & Validation Workshop:* This can be considered part of a larger capacity-building process, given its multilateral and multidisciplinary dimensions.

Broader NA training coverage at the country level

The compilation of NA requires the collection of data from different sources and covering different sectors. Furthermore, the compilation of satellite accounts has to follow a framework that is coherent with the NA. Since the System of National Accounts 1993 has to be used as a reference methodological framework, there is a need to promote this framework both inside and outside NSOs. A new approach would consist in extending training in NA to experts in all the statistical fields, through the following:

- To introduce them to the basics of NA;
- To underline the linkage between their fields and NA and to stress the criticality of their statistical inputs/outputs in the set of SNA accounts and tables;
- To define effective flows of information between statistical sectors and the SNA convergence framework;
- To ensure proper synergy between sector survey activities and the NA work;
- To mainstream the compilation of NA in the review of macroeconomic and social situations of countries, in the context of their Poverty Reduction Strategies or development programs.

Strengthened coordination between NSOs and STCs

The strengthening of the cooperation between the NSOs and the STCs could take different approaches, including:

- Agreement by NSOs to provide to an STC their basic data and files, and to authorize the STC to use its figures in training case studies. In return, the STC would support the NSOs with the compilation of its NA, based largely on on-the-job-training.
- Agreement by PDPs to mandate some of their staff to assist in training courses and to help STCs to coordinate and contribute to some training sessions.

5.   MONITORING AND EVALUATION

It may take some time for the first concrete results of the PDP collaboration to become evident. It is therefore recommended that such an ambitious and long-term process be regularly monitored and that clear benchmarks be established at key stages of the process. The monitoring mechanisms to be developed should be adapted to the institutional and technical dimensions of the collaboration. The technical monitoring should be adapted to the specific nature of the PDPs' operational approaches developed in section 4.

The cyclical steps developed in subsection 4.1 should be subject to systematic and benchmarked monitoring and address the following questions:

— What contribution is expected at each stage of the annual cycle?
— What was the quality of the country contribution?

The PDP partners should meet annually to review the cycle, assess the achievements, and agree on the way forward for the next cycle. Specific mechanisms should be developed for (i) the monitoring of the "punctual steps" of the cycle mentioned above, (ii) the coordination and optimization of the support to African countries and (iii) the joint training strategy should be continuous. The outcome of the monitoring should be subject to the joint review by the PDPs.

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Partnership Model for the Implementation of Regional Statistical Programs: The Case of the International Comparison Program for Africa (ICP-Africa)

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Abstract

The nature of the International Comparison Program for Africa (ICP-Africa), the huge variety of goods and services produced and consumed in different parts of Africa, the number and dispersion of participating countries, along with their differences in size, structure and statistical capacity, make the program a complex statistical operation and pose a major challenge in its implementation. The complexity of the program has been further compounded by the need to meet deadlines in compliance with the implementation of the ICP at the global level. The complexity of the program has been largely overcome through collaborative working partnerships between the AfDB and other stakeholders. The goal of that collaboration is to achieve the most efficient means of conducting the program in the region. The collaborative working partnerships used in the implementation of the program constitute the ICP-Africa Implementation Model. This paper presents the model and its characteristics. The model is based on a number of premises and provides some leverage to AfDB and participating countries. Fundamental partnership principles, which are the pillars to creating synergy among the collaborating institutions and ensuring the sustainability of the whole process, are also presented.

Key words: *Partnership, Collaboration, ICP-Africa, Model, Leverage effect, Sustainability*

Résumé

L'essence du Programme de Comparaison internationale pour l'Afrique (PCI-Afrique), le grand nombre de biens et services produits et consommés dans les différentes parties de l'Afrique, le nombre et la dispersion des pays participants ainsi que leur différence en taille, structure et capacité statistique, font du programme une opération statistique complexe et représentent un grand défi pour sa mise en œuvre. La complexité du programme est exacerbée par la nécessité de respecter les dates butoirs du calendrier de mise en œuvre du programme au niveau mondial. La complexité du programme a été surmontée par une

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collaboration entre la BAD et les parties prenantes dans la mise en œuvre du PCI-Afrique. Le but de cette collaboration est de parvenir à utiliser les moyens les plus efficients pour exécuter le programme au niveau régional. Les relations de travail utilisées dans la collaboration de mise en œuvre du programme constituent le Modèle de Mise en œuvre du PCI-Afrique. L'article présente le modèle et ses caractéristiques. Le modèle se fonde sur certaines prémisses et procure un effet de levier aux activités de la BAD et des pays participants dans le cadre de la mise en œuvre du programme. Les principes fondamentaux qui garantissent l'émulation d'une synergie entre les institutions collaboratrices et la durabilité de tout le processus de partenariat sont aussi présentés.

Mots Clés : *Partenariat, Collaboration, PCI-Afrique, Modèle, Effet de Levier, Durabilité*

1.   INTRODUCTION

The International Comparison Program for Africa (ICP-Africa) is the African component of the International Comparison Program (ICP), a worldwide statistical initiative to generate internationally comparable price and expenditure levels to facilitate cross-country comparisons of GDP and its sub-aggregates in real terms and free of price and exchange rate distortions.

The African Development Bank (AfDB) implemented the 2005 ICP-Africa round in close collaboration with 48 African countries, four sub-regional organizations (namely l'Observatoire Économique et Statistique d'Afrique Subsaharienne (AFRISTAT), the Common Market for Eastern and Southern Africa (COMESA), the Economic Community of West African States (ECOWAS), and the Southern African Development Community (SADC)), the World Bank, Statistical Training Centers (STCs) in Africa, and other partners. The United Kingdom Office for National Statistics and the French Statistics Office (Institut National de la Statistique et des Études Économiques, INSEE) provided technical assistance on a need basis and in line with the AfDB's technical requirements. A regional coordination team at the AfDB and a national coordination team within each country had the responsibility for the data collection and the day-to-day management of the program at the regional and national levels respectively.

In addition to the main objective of ICP, AfDB added the following dimensions to the African component of the program: (i) strengthening

national statistical capacity in price and national accounts; (ii) making the ICP an integral part of national statistical systems; and (iii) promoting the use of ICP data for policy decisionmaking processes.

The nature and complexity of the program demand the collaboration of all stakeholders in its implementation. It is also clear that the long-term needs of the program and its sustainability can only be met by greatly strengthened capacity and cooperation among national statistical offices (NSOs), which bear the primary responsibility for the program at the national level. The cooperation should also be extended to other institutions. For that reason, AfDB's approach to implementing ICP-Africa is built on partnership with all stakeholders for statistical development in Africa. The Statistics Department of the AfDB considers partnership to be a core value for statistical capacity building, and the strengthening of the national statistical systems (NSS) as one of its primary objectives.

The huge variety of goods and services produced and consumed in different parts of Africa and the dispersion of participating countries, along with their differences in size, structure, and statistical capacity, made the program a complex operation and posed a big challenge in its implementation. The complexity of the program was further compounded by the need to meet deadlines in compliance with the implementation of the ICP at the global level.

The collaborative working relations used in the implementation of the program constitute the ICP-Africa Implementation Model. This paper presents the model and its characteristics in sections two and three respectively. Section four presents a number of elements required to build the trust needed to sustain the partnership; these can be used to increase the efficiency of future partnerships.

2.   THE ICP-AFRICA IMPLEMENTATION MODEL

The AfDB used a network approach that brings together AfDB, subregional organizations, and national statisticians working on the same problems to jointly conduct activities for the implementation of ICP-Africa.

Figure 1: ICP-Africa Partnership Model
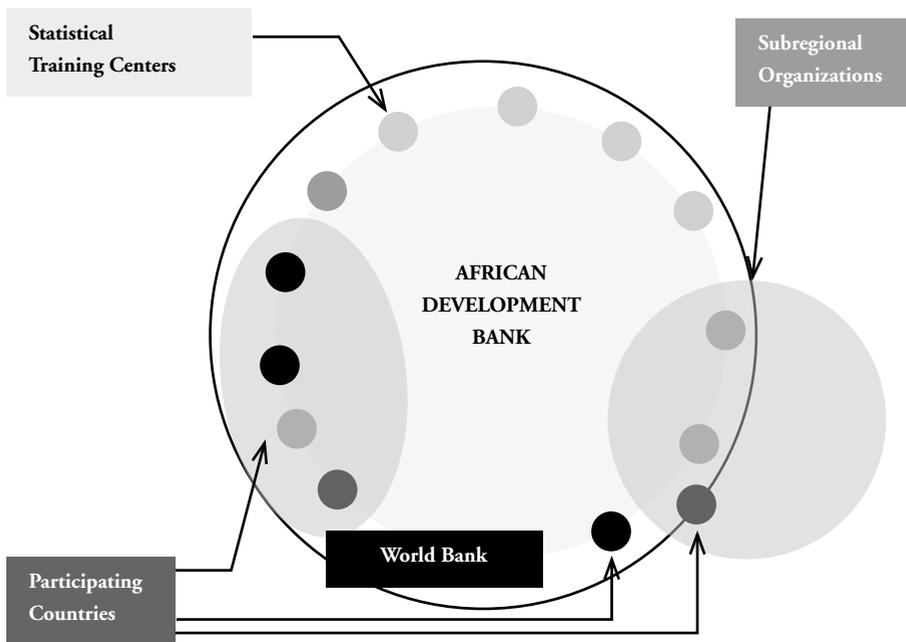
Closer and more pragmatic collaboration with all statistical development stakeholders is a major component of the AfDB model, which is founded on the establishment of a regional statistical system, as illustrated in Figure 1. The system is based on complementarity among partners, leveraging the comparative advantages of statistical development institutions in Africa. This model is founded on the following premises:

• The entire regional statistical infrastructure in Africa (including NSOs, subregional organizations, statistical training centers, and other partners) should be considered as an integrated and interdependent system, in which each member has a specific and determinant role to play.

• The nature and complexity of the program, as well as the magnitude of the needs for improving statistical systems, are such that no single institution, including AfDB, can address them alone and effectively.

• The collaborative activities should be designed and implemented in such a way that they: (i) facilitate the implementation of the statistical initiative; (ii) strengthen the institutional capacity of partners to

fulfill their respective responsibilities in the long term; (iii) optimize the exchange of experience and spillover benefits of these activities at national and regional levels; and (iv) create among all stakeholders a sense of ownership for the whole process and achievements.

• An effective partnership requires the full participation of all parties in the planning of the collaborative activities. Although AfDB initiated and coordinated the planning process, the full participation of and endorsement by officials of NSOs and subregional organizations proved crucial for success. This was obtained through consultation during workshops and statistical fora.

In addition to the implementation of the program, the model's objective is to contribute to the enhancement of statistical capacity through a system linking statistical development stakeholders in the region. The overall aim is to facilitate the production and dissemination of reliable price and national accounts data to end users.

Within the framework of the implementation of ICP-Africa, activities were conducted at the national, subregional, regional, and global levels:

1. *Activities at the national level:* These were mainly conducted by national statisticians and dealt with national aspects of the program like sampling outlets, conducting pre-surveys, training data collectors, and national data collection and validation. These activities benefited from some inputs from AfDB and/or consultants on demand and/or during supervision missions.

2. *Activities at the subregional level:* The subregional organizations involved in the implementation of ICP-Africa worked closely with the regional coordination team to organize and conduct subregional workshops. They handled administrative matters such as disbursement and procurement, and supervised the fieldwork.

3. *Activities at the regional level:* In addition to the regional coordination role and the interaction with the global office and other partners, members of the regional team dealt mainly with issues such as the development of data validation tools, the regional list of products, regional data validation, and computation of regional estimates of purchasing power parities (PPPs).

4. *Activities at the global level:* Activities at the global level provided support on technical issues, the joint planning of the work program with other ICP regions and the global office, the evaluation of progress made in different ICP tasks, and data validation at the global level. In addition to the highly participatory nature of the planning process, the efficiency of the ICP implementing mechanism hinges on strict adherence to time schedules and the willingness to share information and good practices.

Some tasks (e.g. the development of the regional list of products) require the involvement at all four levels: national, subregional, regional, and global. These activities can be termed *comprehensive layer activities*. Activities at the national and regional levels can be termed *national layer activities* and *regional layer activities* respectively.

Country visits, retreats, and various workshops were organized to bring country price and NA statisticians together to work on some aspects of the comprehensive layer activities. The meetings were highly participatory and promoted interactions between regional partners and AfDB statisticians.

The varying strengths of National Statistical Offices (NSOs) meant that some countries were able to implement the program more quickly than others. The regional coordination team took advantage of this opportunity to develop cooperation among participating countries: (i) statisticians from some advanced NSOs visited less developed NSOs to help them on specific ICP tasks; and (ii) retreats were organized to bring together selected statisticians from NSOs to work with AfDB statisticians on regional issues.

Within the integrated system, regional and national ICP-Africa activities were aligned with national statistical activities like the compilation of the Consumer Price Indices (CPIs) and National Accounts (NA) to maximize the complementary nature of the activities. This generated a robust and dynamic collaborative statistical system, resulting in a joint implementation of statistical activities and dissemination of results. Price and NA data have been improved by harmonizing statistical concepts according to international norms and standards.

3.   LEVERAGE EFFECT OF THE IMPLEMENTATION MODEL

The leverage effect of the ICP-Africa implementation model can be illustrated by considering the comprehensive layer activities and showing how the AfDB and the NSOs as a whole benefited. At the beginning of the program, the Statistics Division comprised 17 staff, including the Division Manager and the ICP-Africa Coordinator. Suppose that each staff spends a proportion of his/her time working on the comprehensive layer activities, so that in total 11 statistician-years were devoted to these activities. The 48 participating countries each have a national coordination team composed of a national accountant, a price statistician, and an administrative assistant. The time allocated to ICP-Africa activities varied by country and by team members within a country. Some members of the national coordination team worked solely for ICP-Africa, while others also worked on other NSO activities. Suppose that on average, the national accountant and the price statistician spent 25% of their time in conducting comprehensive layer activities. This gives a total of 24 statistician-years for the participating countries.

The leverage effect is illustrated in Figure 2, on the basis of the above hypotheses. The contribution of the partnership to the AfDB implementation of the comprehensive layer activities is estimated at 24 statistician-years. The AfDB also benefited from direct access and co-producer status of the data collected by participating countries.

Figure 2: Leverage of the ICP-Africa Implementation Model on AfDB and NSOs

AfDB = 17 statisticians   NSOs: 96 + 11 = 107 statistician-years
NSOs = 96 statisticians   AfDB: 17 + 24 = 41 statistician-years
Total = 113 statisticians

ICP-Africa comprehensive layer activities
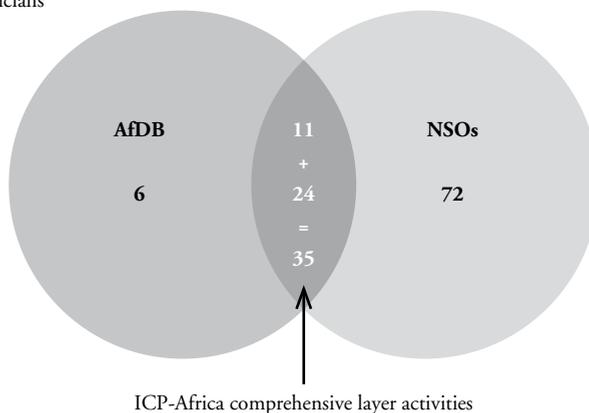
The estimated time devoted by statisticians to comprehensive layer activities constitutes 35 statistician-years. This means that the model's leverage effect enabled the AfDB and any given country to benefit from more human resources collectively than they individually possessed to conduct comprehensive layer activities. The partnership model provided an estimated 11 statistician-years to the participating countries' NSS as a whole. The leverage effect of the AfDB to the NSOs is even greater if, in addition to the comprehensive layer activities, we also consider the regional layer activities.

The relation pictured in Figure 2 can be extended to any statistical initiative where a partnership is used for its implementation, as represented by the following simple equation:

$$Y_{\alpha\beta} = \sum_{i=1}^{N} \sum_{j=1}^{M_i} \delta_{ij}^{\;\alpha} A_{ij}^{\;\alpha} \qquad (1)$$

Where

$Y_{\alpha\beta}$ is the estimated number of statistician-years devoted to α-layer activities in institution β (NSOs or AfDB);

N is the number of institutions in the partnership for the implementation of the statistical initiative;

M_i is the numbers of staff in charge of the implementation of the statistical initiative in institution i;

$\delta_{ij}^{\;\alpha} = 1$ if staff j in institution i participate in the implementation of α-layer activities and zero otherwise;

$A_{ij}^{\;\alpha}$ is the share of time devoted to α-layer activities by staff j in institution i with $0 \leq A_{ij}^{\;\alpha} \leq 1$.

Equation (1) can also be used for national layer and regional layer activities. For national or regional layer activities in institution β (a given NSO or AfDB respectively), equation (1) reduces to

$$Y_{\beta} = \sum_{j=1}^{M_{\beta}} \delta_{\beta j} A_{\beta j} \qquad (2)$$

Where

Y_β is the estimated number of statistician-years devoted to national/regional layer activities in institution β;

M_β is the numbers of staff in charge of the implementation of the statistical initiative in institution β;

$\delta_{\beta j}$ = 1 if staff j in institution β participate in the implementation of national/regional layer activities and zero otherwise;

$A_{\beta j}$ is the share of time devoted to the national/regional activities by staff j in institution β with $0 \leq A_{\beta j} \leq 1$.

Through the complementary nature of the activities, and the leverage and spillover effect of the implementation model, NSOs were able to save scarce resources by reducing activities in areas where they lacked adequate capacity. Their approach in such cases was to draw instead on knowledge and lessons learnt from other countries and from the AfDB, where the specific capacities might be greater. National resources freed in this way were then available for other activities. Also, national statisticians were not working in isolation but benefited professionally from frequent interactions with colleagues in other NSOs, subregional organizations, and in the AfDB.

4. SUSTAINABILITY OF THE PROCESS

The sustainability of the process rests on several factors, including the diffusion of ICP methodology, the dissemination of the results and their access by researchers and development institutions, their use by policymakers and other end-users, and the strengthening of fundamental partnership principles.

4.1 Diffusion of ICP methodology

The NSOs were the AfDB's principal partners in the implementation of ICP-Africa. A partnership requires a similar knowledge base among partners to ensure its sustainability. Also the collection, processing, and dissemination of ICP relevant and reliable data require well-trained statisticians in ICP methodologies. For those reasons, STCs in Africa, which have the primary responsibility for training statisticians, form the cornerstone for the sustainability of the program. A training program on the ICP

methodology must be developed and included in the curriculum of STCs, as well as in faculties of economics in African universities. The training strategy must also extend to NSO staff, to ensure the diffusion of ICP methodology and to build their capacity to conduct ICP activities. To that end, the AfDB should undertake the following activities in collaboration with the STCs and NSOs:

- Design specific curricula on ICP-related theory and methodologies;
- Organize courses on ICP for statistics students;
- Design ICP-related modules for short-term training activities;
- Organize and facilitate training workshops on ICP.

The training will be organized using the standard format, e.g. generic information and skills training, or as workshops where representatives take an active part in presenting material and in discussion. The steps in implementing training courses are described in Figure 3. It is also important for African STCs and universities to participate in research and global discussion on ICP issues.

Once the training needs have been identified, the activities start with a curriculum design and a training strategy. The elaboration of training material and the training of trainers follow the curriculum design and the training strategy. The curriculum design, the elaboration of training materials, and the training of trainers form the training triangle. Each apex of the triangle should help to improve the other two, as in a virtuous circle: (i) following the training of trainers, the training material will be revised and the curriculum design adjusted accordingly; (ii) the revision of the training material will improve the training of trainers and the curriculum and (iii) the improvement of the curriculum has a direct influence on the training material and the training of trainers. The courses are conducted regionally and/or at the national level. The nature of the courses (i.e. generic skills training or workshop) will depend on the objectives and the targeted participants. Evaluation and follow-up activities end the process.

The AfDB has signed agreements to undertake the diffusion of the ICP methodology in collaboration with four STCs, namely the Ecole Nationale Supérieure de la Statistique et d'Economie Appliquée (ENSEA in Abidjan), The East African Statistical Training Center (EASTC in Dar Es Salaam), the Institut Sous Régional de Statistique et d'Economie Appliquée (ISSEA in Yaoundé), and the Institute of Statistics and Applied Economics (ISAE-Makerere University Kampala). Training on PPP computation has already been conducted in ENSEA, EASTC, and ISSEA. The work

will continue with the development of a program covering the entire ICP methodology.

Figure 3: Outline of the Training Strategy

TRAINING			
AfDB (REGIONAL)	IN-COUNTRY TRAINING	STCs TRAINING	UNIVERSITY TRAINING
- NSOs - Ministries	-NSOs - Policymakers	- Students - NSOs	- Students - Policymakers
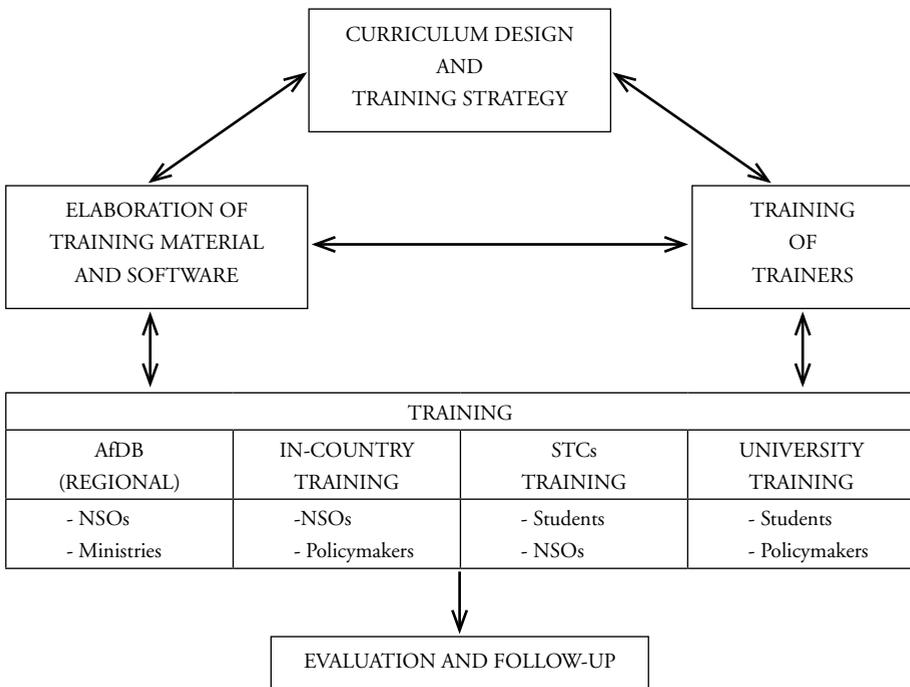
4.2   Dissemination of the results

NSS activities have mostly centered on data production. While it is important to maintain that focus in order to meet data demand for development needs, it should also be recognized that there has been inadequate dissemination of data to end-users. To ensure the sustainability of ICP-Africa, the dissemination of its results should contribute to broadening the current regional economic and social knowledge and should aim at improving the statistical data supply. The primary objective of the dissemination activities is to increase the level of usage of ICP-Africa results by researchers, planners, and policymakers. Those activities should include publishing the results in different forms (hard copies, CD-Roms, AfDB website, press releases etc.), informing all stakeholders about the availability of the results, conducting press conferences, developing databases, and holding

dissemination workshops. These activities should be conducted in collaboration with all stakeholders who participated in the implementation of the program. Specifically, it is expected that the dissemination activities will:

- Promote better access to use of the results by data users, researchers, and planners;
- Create greater awareness about the importance of ICP data among data users, researchers, planners, and decision and policymakers;
- Give greater emphasis to transforming the data into information, i.e. that data generation should dovetail with data dissemination activities to make results more "user-friendly";
- Help in defining research questions, especially with respect to interdisciplinary research activities outside statistics and economics.

It is also critical to conduct advocacy activities to create strategic alliances among stakeholders, including decisionmakers, policymakers, and data producers. The aim is to break the vicious circle where too few resources are allocated to statistics, resulting in poor quality and inaccessible data, which in turn undermines the value of statistics and discourages policymakers from allocating further resources to its activities.

4.3   Strengthening fundamental principles of partnership

Effective partnerships can be very difficult to achieve and rely on adherence to some fundamental principles for creating synergy among the collaborative institutions, thereby ensuring the sustainability of the whole partnership process. Those principles have been underlined by Spink and Merrill-Sand (1999) and include:

- *Power equity:*   A partnership process may break down if its members feel that they are not given credit for their contribution or are devalued. Power equity can be created through an active and full participation of all partners, information sharing among partners, negotiated and transparent priority setting, and a clear assignment of roles and responsibilities.

- *Interdependency and complementarity:*   Because of the nature of the ICP, no single country or institution can implement the program alone; this requires the collaboration of all stakeholders. The complexity of ICP requires a broad knowledge base, innovative tools, and diverse expertise. This need for complementarity and interdependency has to be recognized by all partners early in the formation of the partnership.

Members need to appreciate that collectively, the partnership will create something that they cannot achieve individually (the whole being greater than the sum of its parts).

- *Mutual accountability:* The success of the partnership depends on each member fulfilling their responsibilities and commitments in a timely fashion. This can be achieved through the development of a shared ownership of the program, making the partners aware that their reputation is at stake and vesting the group with authority to exercise agreed sanctions.

- *Communication:* It is essential to have effective communication channels among partners at the managerial and operational levels, as well as a good information flow and capacity to delegate within the institutions forming the partnership. Special emphasis should be placed on ensuring continuity of the activities and personnel, and on setting up regular contacts by means of meetings, video-conferences, phone, fax, and email.

- *Assessment of the process:* The whole process needs to be reviewed midterm in order to identify any shortcomings and take any corrective measures that may necessary. At the end of the program, a self-assessment should be undertaken by all members to provide feedback on the partnership's strengths and weaknesses. The results of the self-assessment will be used to explore ways of improving weak areas. The findings of both the midterm review and the self-assessment should be properly documented as lessons learnt, and used to increase the effectiveness of future partnerships for the implementation of regional statistical initiatives.

5.   CONCLUSION

The nature of the program, the number and dispersion of participating countries, along with their differences in statistical capacity, and the imperative to meet deadlines set at global and regional levels, make the implementation of ICP-Africa a complex and challenging operation. The complexity of the program has been largely overcome through collaborative working partnerships between the AfDB and the other stakeholders.

The use of the same tools across countries, and the need to conduct statistical operations at the same time in different countries, provided some

leverage and spillover benefits to working together as a single statistical system. Economies of scale were achieved by sharing and jointly producing information, and by pooling limited human and financial resources.

The ICP-Africa Implementation Model served to link up statistical development stakeholders in the region. By adopting participatory approaches and sharing experiences and best practices, the model has contributed to the enhancement of statistical capacity in Africa.

The model can be used to implement any regional statistical initiative aimed at tackling common statistical challenges facing countries and/or at producing common statistical goods. Through its collaborative approach, the ICP-Africa Implementation Model allows countries to reap benefits that they could not achieve individually.

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Mainstreaming Sectoral Statistical Systems into a National Strategy for the Development of Statistics

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Abstract

In order to be effective, development policies require comprehensive data from a variety of sectors. It is necessary to make data collected by sectors and by national statistical offices (NSOs) more widely available to meet the results-based development agenda. Unfortunately, in Africa most National Statistical Systems (NSSs) are not well coordinated, with NSOs operating autonomously and sectoral statistical systems operating vertically. This paper summarizes a framework of objectives and strategies to mainstream sectoral statistical systems into an NSS. The framework has been developed and a guide was published in 2007. The objectives are: (i) to make more efficient use of resources in the statistical system; (ii) to improve the provision of indicators; (iii) to increase the productivity of data collection and its management; and (iv) to raise the public profile for statistics. Twelve crosscutting strategies are described to meet these objectives. The intended result is a coordinated NSS capable of efficiently and effectively monitoring development progress.

Key words: *Statistical systems, Strategy, Sectors, Results-based development agenda*

Résumé

Pour être efficaces, les politiques de développement requièrent des données complètes émanant de divers secteurs. Il est nécessaire de faire en sorte que les données collectées par les secteurs et les instituts nationaux de statistiques (INS) soient disponibles à plus large échelle afin de satisfaire aux exigences des programmes de développement axées sur les résultats. Malheureusement en Afrique, la plupart des systèmes statistiques nationaux (SSN) ne sont pas bien coordonnés, les INS fonctionnant plutôt de façon autonome alors que les systèmes statistiques sectoriels fonctionnent verticalement. Cet article reprend de façon condensée le cadre des objectifs et des stratégies pouvant être utilisés dans l'intégration des systèmes statistiques sectoriels dans un SSN. Ledit cadre a été

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élaboré et un guide a été publié en 2007. Les objectifs sont énumérés comme suit : (i) faire une utilisation plus efficace des ressources; (ii) améliorer la disponibilité d'indicateurs; (iii) accroître la productivité de la collecte et de la gestion des données; et (iv) rehausser le profil public des statistiques. Douze stratégies transversales sont décrites en vue d'atteindre ces objectifs. Le résultat prévu est un SSN mieux coordonné permettant un suivi plus efficace et plus efficient du progrès du développement.

Mots clés : *Systèmes statistiques, stratégie, secteurs, programme de développement axé sur les résultats*

1.   INTRODUCTION

The emphasis on managing for results has created an increase in statistical demand to monitor and measure the progress of development strategies[4] and frameworks. This dictates the need for inputs, outputs, outcomes, and impact indicators.

Statistics are required to support policy agendas and research on established development goals that arise from various world summits and conferences, Country Support Programs (CSPs) plus UN Development Assistance Frameworks (UNDAF) developed at country level in line with national development priorities. They are also required to inform policies on crosscutting issues, such as democracy, good governance and human rights, gender, HIV/AIDS surveillance and monitoring, environment, etc. The entire NSS must be capable of supplying all required statistics and indicators that support these programs and policies.

However, most data needs in Africa cannot be met due to under-resourced and capacity-weak NSSs. In order to redress this situation, capacity of the various components (sectors) of the NSS require enhancement. This implies having a paradigm shift in the development of NSSs in which all components are strengthened along with the improvements taking place at the NSO level. The focus of preparing medium-term strategies or corporate plans for NSOs, or even designing a National Strategy for the Development of Statistics (NSDS) but addressing the concerns of the NSOs

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[4]   Development strategies and frameworks include sectoral policies and programs in agriculture, environment, education, health, labor and employment, commerce and industry, and infrastructural development etc.; national development plans; national vision frameworks; Poverty Reduction Strategy Papers (PRSPs); New Partnership for Africa's Development (NEPAD); the Millennium Development Goals (MDGs).

only, must change. An overall development of statistics in a country should therefore cover the whole NSS, integrating the concerns of all the sectors into the NSDS.

This paper presents a framework of objectives and strategies to mainstream sectoral statistical systems into an NSDS. The second section emphasizes the necessity to strengthen the entire NSS through the design and implementation of an NSDS that mainstreams sectoral and subnational statistical systems. The third section presents the process for developing the framework and the tools for mainstreaming sectors' statistical systems. The fourth section describes the current situation in the Africa region before concluding the paper.

2.   DEVELOPING STRATEGIES TO STRENGTHEN THE WHOLE NSS

The NSS of a country is made up of multiple stakeholders: the producers, users and suppliers of information (including respondents, of all categories, to statistical requests – individuals, households, public institutions, enterprises and establishments, etc.), the authorities funding statistical development, training institutions and research centers, non-governmental organizations (NGOs), civil society organizations (CSOs), the private sector, development partners, and the media. All these constituents must be strengthened for an NSS to remain strong.

African NSSs have proved to be weak over the years. This is due to limited involvement on the part of all key stakeholders in statistical development – a situation that the Reference Regional Strategic Framework (RRSF)[5] seeks to correct. To generate comprehensive quality statistics, the capacity of all key producers must be further developed, with coordination by the NSO. However, in order to undertake this coordination function, the NSO should be empowered legally, financially, technically, and administratively, including providing leadership to the NSS. As a public "good," statistics

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[5] The RRSF for Statistical Capacity Building in Africa was prepared jointly by the AfDB, ECA, the World Bank and the Partnership for Statistics in the 21st Century (PARIS21). The Framework was adopted in February 2006 at the second Forum for Statistical Development in Africa (FASDEV-2). The Forum brought together all the key stakeholders involved in statistical development work in Africa: UN agencies, multilateral and bilateral institutions, subregional organizations, STCs and Directors of National Statistical Offices from 51 African countries. The stakeholders assigned AfDB and ECA responsibility for overseeing the implementation of the RRSF.

production should be funded mainly by governments, who are the major users of statistical products. There is a need to promote an evidence-based policy/decisionmaking culture across government and the private sector for effective investment and business planning.

In essence, users must be reoriented to understand their respective roles in enhancing the production of relevant and quality statistics. They must also be empowered to demand, analyze, interpret, and use statistics for their various tasks. The suppliers should be motivated to respond promptly and truthfully to statistical requests. Training institutions need to be strengthened to put in place relevant curricula in their statistical training programs, and to fully collaborate with statistical agencies in methodological research. The research centers, for their part, should partner with the statistical agencies on in-depth statistical analysis. The NGOs and CSOs, which play a major role in advocacy and in monitoring and evaluating programs, should be empowered to access data.

The media role is crucial in reporting to the broader public about events, supported by statistics for empirical evidence. The media can also play a significant function in advocating for greater awareness of the importance of reliable and timely statistics. Finally, development partners and the private sector must be reoriented to support governments and encourage the orderly development of statistics through their interventions.

National statistical development must be holistic and comprehensive to ensure that the NSS delivers relevant statistical products to meet all the diverse demands at subnational, sectoral, national, and international levels. Arguably, the best approach to strengthening statistical development is the design and implementation of an NSDS that seeks to support and strengthen all the elements of the NSS.

At the sectoral level, the need to support the various sectoral plans and policies with relevant and adequate statistics is critical. At the subnational level, where the decentralization policy and other development frameworks and policies are implemented, adequate and reliable statistics are required for the planning, monitoring, and evaluation of the programs and formulation of policies. To expect the NSO to make available these wide and varied statistics has proved to be a mirage.

The development of statistics and the resolution of statistical problems in many African countries have taken the form of merely making interventions at the NSOs, in the mistaken belief that these offices would be

able to supply data on all the components of the NSS (i.e. at sectoral and subnational levels). However, this has always resulted in very poor statistical deliveries with correspondingly poor development outcomes. The improvement of national statistics has therefore met with failure, as their development has not been far-reaching enough.

There is an imperative to develop statistical strategic plans for each sector and subnational constituent, which will take account of their specific needs and strengthen their systems and capacity to produce their own kind of statistics. For instance, there need to be strategies for improving administrative statistical systems, computing small-area statistics, manpower development for coordination, dissemination, etc. This implies that a Sectoral Strategy for the Development of Statistics (SSDS) and Subnational Strategy for the Development of statistics (SnSDS) should be made available at sector and subnational levels respectively. These could then be integrated into the overall NSDS.

3.   FRAMEWORK FOR MAINSTREAMING SECTORAL STATISTICS

3.1   Development of the Guide

The concept of mainstreaming sectoral issues into the various stages of NSDS design was shared and commenced during AfDB workshops in 2006. These training workshops formally launched the AfDB's assistance to the NSDS design process with respect to AFRISTAT, COMESA, ECOWAS, and SADC member countries.[6] At the workshops, case studies and reference documents were presented and discussed.

The guide *Mainstreaming Sectoral Statistical Systems in Africa: A Guide to Planning a Coordinated National Statistical System* (2007) is a collaborative effort by the African Development Bank, the Partnership in Statistics for Development in the 21st Century (PARIS21) and Intersect, with input from statisticians in a number of African countries and international organizations. It also incorporates work of the Food and Agriculture Organization

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[6]   The subregional workshops were conducted in Nairobi (Kenya) for COMESA member countries; in Accra (Ghana) for ECOWAS member countries; in Durban (South Africa) for SADC member countries; and in Bamako (Mali) for AFRISTAT member countries. The workshops aimed to empower key NSS actors with knowledge about the NSDS processes, to facilitate a sharing of experience among them, and to ensure that standard approaches would be used in all countries preparing their NSDS.

(FAO), the International Labor Organization (ILO), the United Nations Education, Science and Culture Organization (UNESCO), and the World Health Organization (WHO). Various case study materials were compiled and drawn upon, with Uganda's experience of integrating sectors into its Plan for National Statistical Development and Senegal's experience in developing its NSDS being particularly informative. The Guide also draws on the Framework for Health Information Systems (HIS), developed by the Health Metrics Network (HMN). Its objective is to contribute to the development of statistics and the attainment of development outcomes in African and other low- and middle-income countries. Its strategy is to guide staff and leadership of NSOs in the development of their NSDS and a coordinated NSS (with shared goals and crosscutting strategies), so that they will be capable of efficiently and effectively monitoring development indicators.

Figure 1: The Five Phases of the NSDS Process
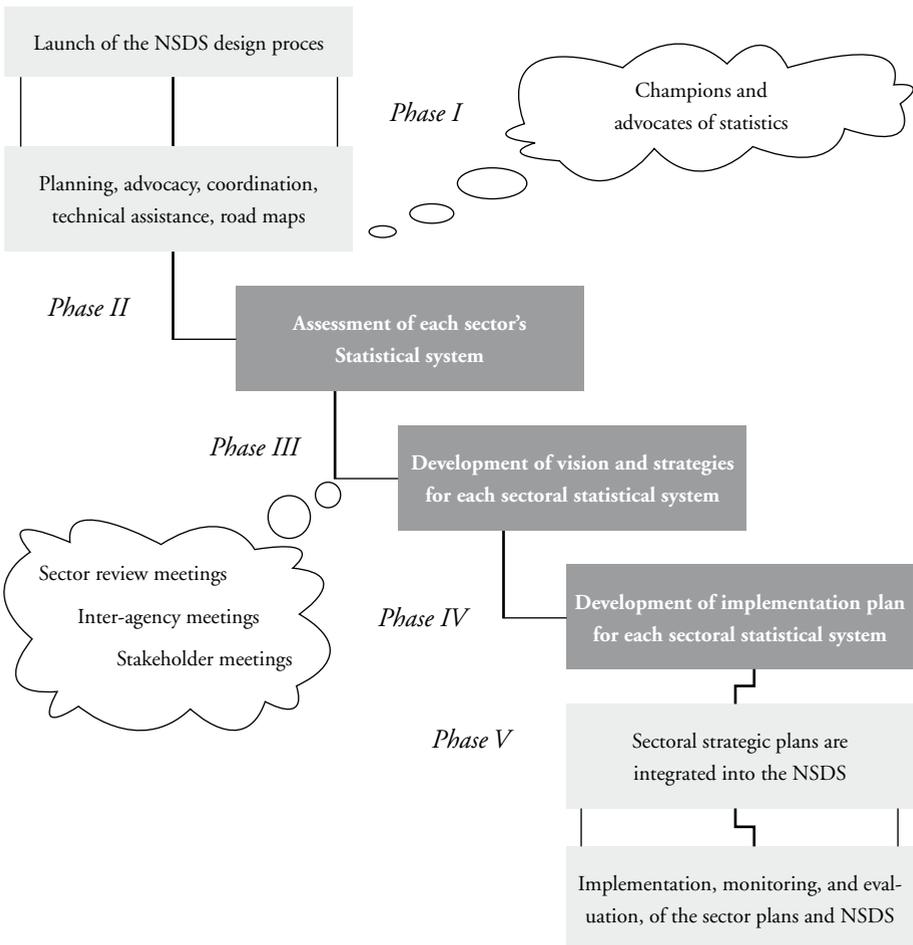
3.2   The process of developing SSDS/NSDS

There are 5 phases in the NSDS process (see Figure 1):

1. Launch of the NSDS design process;
2. Planning including administrative setup, advocacy, coordination, technical assistance and drawing up the road maps;
3. Assessment of each sector's statistical system followed by the development of a vision and strategies for each;
4. Development of an implementation plan for each sectoral statistical system;
5. Sectoral strategic plans are integrated into an integrated NSDS followed by implementation, monitoring and evaluation of the sector plans and the NSDS.

The SSDS/NSDS design process begins with some preliminary tasks which include: setting up the administrative procedures (i.e., establishment of committees, working groups/task forces across the sectors); assignment of responsibilities to key actors and establishing reporting channels. There follows an advocacy campaign, which aims to identify, reach and brief stakeholders and to acquire technical assistance, as consultants might be needed to facilitate the process. A roadmap is then developed, detailing the required tasks and activities and to ensure realistic time-lines, articulation of responsibility centers, expected outputs, and the budget estimate for the tasks.

After the preliminaries have been completed, an in-depth assessment of each system is needed. This covers a review of earlier assessments, analysis of the current status (sector statistics, coordination and management; legal framework; financial outlay; stakeholder analysis; SWOT analysis; physical, statistical and IT infrastructure; data production and management; data quality; user assessment; and gap analysis), the human resources situation, and dissemination policies and strategies. A written report of the assessment must be published, identifying all the challenges.

A crucial phase is reached when the vision, mission, and strategies are developed. It is important to differentiate between these three terms. (i) A vision is about "where we wish to be," (ii) the mission is "what our business is" and (iii) strategies are "how we achieve our strategic objectives," which are derived from the challenges. Strategies are detailed out by sectors, outlining sector-specific and crosscutting strategies that are mainstreamed into the NSDS.

Once the strategies have been determined, they are translated into budget/ financial plans (list of activities by strategies). Each activity or group of activities must be associated with a set of inputs or resources, a time-line, output indicators, the responsible actors, and statements of the assumptions that must be valid for the inputs to lead to the specified outputs. In this way, a logical framework or action plan is constructed, which will be useful to monitor implementation and also measure performance. An example of a model action plan is illustrated below in Figure 2.

Figure 2: Model Action Plan

Strategic issue	Activities	Outputs	Performance Indicators	Targets	Responsibility center	Assumptions

Then an implementation/action plan needs to be articulated in each SSDS and in the national strategy (NSDS). It must include the mechanisms for managing the implementation process, monitoring, evaluation and reporting arrangements. Also, a mobilization of funds process has to be launched for the implementation of the SSDS/NSDS. Funding is expected to come from both government and donors, with the government leading the way. With some imagination, other sources of funding for the SSDS/NSDS implementation may be found and tapped into.

3.3   Strategies for mainstreaming sectoral statistics into the NSDS

When designing an integrated NSDS, for the effective mainstreaming of the sectors and the subnational statistical systems, various crosscutting strategies can be employed. These help to enhance coordination at the different levels; namely for integrated programs, shared capacity-building programs, common legal frameworks, and coordinated funding. Such strategies ensure a more efficient use of resources and greater benefits, as elaborated below:

• *Coordination* is enhanced when common institutional and technical procedures are developed for coordination, collaboration, and cooperation. These ultimately lead to vibrant and durable partnerships and networking within and across sectors and between the various subnational entities and users. The NSO should lead this process through

various means, including: establishing coordinating committees, NSS meetings and seminars, an NSS newsletter, a common NSS website and email discussion groups, plus use of standardized definitions, concepts, methodology, and classifications.

- *Integrated programs* can be achieved by formulating a harmonized data production schedule with corresponding data release calendars for censuses and surveys for each sector/subnational entity integrated into the NSS statistical program.

- *Shared capacity-building programs* will be achieved through the development of a comprehensive human resources (HR) strategy that ensures uniform training, recruitment, and promotion procedures for all staff working in the NSS. Assessment procedures will help to identify gaps in HR capacity and skills in each sector/subnational entity and for the system as a whole (NSS). Assessments also establish priorities for career development to sustain statistical production. Based on these, an NSS-wide HR strategy could be developed to provide specialized training, and to develop a common recruitment procedure and career structures for all personnel working across the NSS.

- *A common legal and policy framework* should be drafted to take account of the requirements of all stakeholders in the system, detailing functions, rights and obligations of the subsystems and the NSO. This framework will seek to align the mandates of all components of the NSS, ensuring that there is consistency between all existing laws and mandates. Moreover, the development and specification of data exchange policies between subsystems, the NSO, and the general public should be carried out.

- *Coordinated funding* requires that an NSS-wide financing strategy be developed once the other strategies have been drawn up and the plan is complete. Some activities will be financed solely from sectoral or subnational sources, whereas central funding could be directed at common activities, such as the establishment of a national database/ data warehouse, and the development of training courses for common cadres of staff across the system.

Table 1: Framework for Building a Coordinated National Statistical System

Objective	Strategies to mainstream sectoral statistical systems into a national statistical system	
Make more efficient use of resources	1	Common institutional procedures for coordination, collaboration and cooperation across the NSS
	2	Legal and institutional framework that takes into account the requirements of all stakeholders in the NSS
	3	NSS-wide financing strategy
	4	Comprehensive human resource strategy with uniform training, recruitment and promotion procedures for all staff working in the NSS
	5	Rationalized use of physical infrastructure and ICT across the NSS
Improve the productivity of data management	6	Coherent management information system across the NSS
	7	Common data warehouse for the NSS
Increase the availability of quality data	8	Common metadata dictionary across the NSS
	9	Common standards for data quality across the NSS
	10	Harmonized data production schedule across the NSS
	11	Comprehensive dissemination policy for the NSS
Raise the public profile for statistics	12	Coherent advocacy strategies across the NSS

3.4 Challenges in mainstreaming sectoral statistics

Mainstreaming sectoral statistics presents challenges at various levels. At the NSO level (implementing agency), getting sectors to buy-in can prove an uphill task; so too might finding appropriate champions to steer the process. Another challenge is dealing with the high expectations of stakeholders (producers and users) of statistics, in terms of outputs, as well as resources to drive the process. It is often difficult also to motivate the focal staff to deliver on time and manage their activities; this demands a full-time commitment, whereby participation in other activities may not be possible, otherwise it could affect progress of the SSDS design.

At the sectoral level, bureaucratic procedures and challenges of change management may adversely affect the process. In this regard, Technical Managers need to ensure participation and timely accomplishment of tasks. Finally, identifying champions and cultivating the political will can be difficult and call for familiarity with the institutional and organization

arrangements within the sectors. To ease that, the NSO executive needs to discuss and encourage Sector Accounting Officers to actively support the process.

Overall, mainstreaming sectoral statistics from more than five sectors at a time can affect progression and timely completion of the NSDS. It also places pressing demands on the coordinating agency, due to uneven performance levels in participating sectors. The best option is to phase the process and engage at least three sectors, using a set format including regular reviews over the period.

4. MAINSTREAMING SECTORAL STATISTICAL STRATEGIES IN AFRICAN COUNTRIES

4.1. Stages in developing an integrated NSDS

Statistical development in African countries has evolved through the development of statistical master plans (SMPs), corporate plans, 3-year rolling statistical plans, or 2-year statistical action plans. Mostly, the plans have been limited to the NSO and have focused on the products rather than the development of the statistical production systems. Formerly, there was no strategic direction to statistical planning. Now, there is a gradual shift in approach to designing NSDS in Africa, which incorporates the concerns of the sectors.

Since the endorsement of the RRSF, with the NSDS as its overarching strategy, nearly all African countries have started to prepare a strategy for the development of statistics. Countries fall into different stages of strategy development, namely:

1. A strategy in place, but without sector mainstreaming;
2. A Statistical Master Plan in place, with partial sector mainstream-ing;
3. NSDS preparation in progress;
4. NSDS with some sectors mainstreamed;
5. NSDS with all sectors mainstreamed.

No country has yet mainstreamed a subnational statistical system into its NSDS. Table 2 shows the stages and alternative options to guide countries on what steps to follow, given the different scenarios.

Table 2: Stages in Developing an Integrated NSDS

Row	Degree of main-streaming	Type of system	Approach to NSDS design	Outcome of NSDS design	Next steps
1	**Sectors not mainstreamed**	Centralized or decentralized	NSO does not consult or involve sectors	NSDS document that does not take account of sectoral strategies	Conduct an integrated NSDS using the guide on mainstreaming sectors
2	**Sectors partially mainstreamed**	Decentralized	NSO consults but does not involve sectors	NSDS document that caters for sectors but does not include sector-owned strategies	Review the NSDS document and mainstream sectoral strategies using the guide on mainstreaming sectors
3		Centralized		NSDS document that includes sectoral strategies that are not owned by the sectors	Review and update the NSDS document with the sectors using the guide on mainstreaming sectors
4	**Some sectors fully mainstreamed**	Centralized or decentralized	NSO consults and involves some sectors	NSDS document that includes some sector-owned strategies	Sequence in more sectors in repeated stages of NSDS design using the guide on mainstreaming sectors
5	**All sectors fully mainstreamed**	Centralized or decentralized	NSO consults and involves all sectors	NSDS document that includes sector-owned strategies	Monitor and evaluate NSDS implementation

1. *Sectors not mainstreamed:* Some countries have already designed an NSDS or an SMP but have not mainstreamed sectoral statistical aspects into it. What is recommended as next steps would be for the NSO to work with the sectors to design an integrated NSDS using the mainstreaming guide.

2. *Sectors partially mainstreamed – decentralized system:* Another group of countries may have already designed an NSDS or SMP but only

partially mainstreamed sectoral statistics strategies into that plan. This may be because their system is decentralized, and the NSO designed the sectoral strategies without involving sectoral staff. The next step recommended for this group of countries is for the NSO to involve sectors in the review of the existing NSDS/SMP document and mainstream sectoral strategies, following the guide.

3. *Sectors partially mainstreamed – centralized system:* Some countries fall under a centralized statistical system, where the NSO has outposted its staff to run sectoral statistics units and design the NSDS without involving other sectoral personnel. Here, the recommendation is that the NSO begins working with the sector personnel to review and update the existing NSDS/SMP document using the guide.

4. *Some sectors fully mainstreamed:* What could be considered adequate are countries where some sectors have been fully integrated in the NSS and their sector strategies fully mainstreamed in the NSDS. In these scenarios, the NSO consults and involves some or all of the sectors. The recommendation for this category of "some sector coverage" is that sectors are covered in phases. Where all the sectors have been covered, monitoring and evaluation of the NSDS implementation simply takes place.

5. *All sectors fully mainstreamed:* An adequate NSDS is one where each sector develops its own strategic plan or sectoral strategy (SSDS) and this is mainstreamed in the NSDS.

For completeness and adequacy of strategies for statistical development, subnational statistical systems will also have to be integrated and mainstreamed into the overall NSDS. This component is important and should be addressed in order to have an NSDS that caters for all constituents of the NSS.

4.2　The Uganda Case Study

The approach used by Uganda to design its Plan for National Statistical Development (PNSD) was acknowledged as best practice, and recommended for other countries to emulate. The PNSD is founded on the PARIS21 principles geared toward strengthening the NSS. It is based on the understanding that NSOs are mandated by law to coordinate the production and dissemination of official statistics, and that line ministries are

responsible for supplying sector-specific statistics for monitoring policy implementation and for measuring and reporting progress.

Although at the inception of the Uganda Bureau of Statistics (UBOS), its operation and development were based on a corporate plan that was implemented over a 5-year period, the performance of the agency was not extended to the other components of the NSS. This was because these sectors and their concerns had not been taken into account in the corporate plan. Once this was realized, Uganda quickly embarked on the preparation of a PNSD which, along with the UBOS, incorporated development in some sectors through the design of separate Sector Strategic Plans for Statistics (SSPSs). Nine sectors were taken on during the first phase, while 11 sectors came on during the second phase. The sector strategies were building blocks for the PNSD.

Administrative structures for the process was set up (appointment of a co-ordinator and the design team, sector committees, inter-agency committee and steering committee, advocacy at all levels with the Head of the Public Service as champion, etc.); assessment at the sectors, development of a vision, mission and strategies based on the assessment, implementation plans, monitoring and evaluation.

The PNSD and all the SSPSs are being implemented under a coordinated arrangement (see Box 1), employing all the strategies for mainstreaming the sectors.

Box 1: Crosscutting Strategies for Coordinated NSS in Uganda

The Uganda Bureau of Statistics has adopted strategies for strengthening coordination. These include:

- Establishment of structures (sector statistics committees, the interagency committee, and the proposed Steering Committee) to strengthen coordination efforts within sectors and with the UBOS;

- A comprehensive training program to strengthen staff skills across the NSS;

- Memoranda of Understanding between UBOS and each participating sector under the NSDS as a commitment to implement the Sector Strategy Plans for Statistics (SSPS);

- Common funding mechanism managed by the NSO to facilitate implementation of SSPS by the respective sectors;

- Consensus on standard IT equipment, software, and data management procedures between UBOS and the sectors;

- The development of a National Statistical Databank for the NSS (in progress);

- The compendium of statistical concepts and definitions for the NSS; and

- A harmonized activity schedule.

The PNSD is an amalgamation of sector strategies which are designed by each participating sector and gradually integrated in the overall plan as building blocks. Its design is highly consultative, participatory, and synergistic. It also assumes a bottom-up and holistic approach in integrating key agencies of government. Although government agencies producing statistics in Uganda are numerous, to effectively manage the process, they are "phased" to reduce administrative pressure and allow the NSO to concentrate on statistical issues. Other sectors will be continually phased and

mainstreamed in the NSS over time, along with subnational constituencies.

5. CONCLUSION

Sectoral mainstreaming in the NSDS performs a number of functions and can help African countries to achieve a number of objectives:

- It galvanizes linkages between the NSO and creates equilibrium with respective sectors in the NSS;
- It strengthens the coordination function of the NSO, which underpins the level of participation and the performance of a sector;
- It provides an entry point to the realms of sectoral statistics and skills gaps;
- It justifies the need to harmonize data production and teamwork and breeds a culture of networking and coordination within and across sectors, and between the sectors and the NSO;
- It facilitates identification of relevant indicators that must be generated to inform the national monitoring framework as well as prioritization of the same;
- The collective effort raises the profile of statistics generally.

Hence, mainstreaming sectoral statistics is feasible and worthwhile in terms of providing opportunities and justifies replication elsewhere with probable adjustments.

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Toward a Methodology for Computing a Progress Composite MDG Index

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Abstract

The proposed methodology for computing a progress composite MDG index (P-CMI) should be considered as a work in progress. It is still undergoing peer review and will likely incorporate further revisions. The final methodological proposal is scheduled for publication some time in 2009. The methodology involves the following steps: selection of countries if the percentage of indicators with a missing value is 25% or below; selection of indicator if the percentage of total population of countries without missing data is 75% or above; multiple imputations for missing data; setting of two categories for data normalization; an equal weighting scheme; and linear additive rule for aggregation. In addition, the aggregation procedure follows the hierarchical MDGs structure. Thus, an aggregate index is computed for each target, each goal, and for the whole set of MDGs to obtain the P-CMI. The P-CMI is considered as the probability of achieving the MDGs and it ranges between 0 and 1. A P-CMI of around 1 indicates that a country or group of countries is likely to achieve the MDGs by 2015. A P-CMI of around 0 indicates that a country or group of countries is not making progress in achieving the MDGs by 2015. The sensitivity of the P-CMI is carried out by the computation of Sobol's indices for five factors of uncertainty identified and M-estimators for the overall P-CMI.

Key Words: *Composite indicator, Millennium Development Goals (MDGs), Normalization, Aggregation, Sensitivity analysis*

Résumé

La méthodologie proposée pour le calcul d'un indicateur synthétique de l'avancée des pays africains dans l'atteinte des Objectifs du Développement pour le Millénaire (ODM) doit être considérée comme en cours de développement. Son processus de validation par les différents partenaires se poursuit, pouvant conduire à une future version révisée. La proposition d'une version définitive de la méthodologie est prévue pour l'année 2009. La présente méthodologie est assise sur: sélection du pays si l'ensemble des indicateurs présente moins de 25% de données manquantes, sélection d'un indicateur si la population des pays sans données manquantes représente plus de 75% de la population de l'Afrique, l'imputation multiple pour l'estimation des données manquantes, la définition

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de deux catégories pour la normalisation; l'équi-pondération et l'agrégation complète additive. De plus, la structure hiérarchique des ODM est respectée dans la procédure d'agrégation. Ainsi, un indicateur synthétique est calculé pour chaque cible, chaque objectif et l'ensemble des ODM afin d'obtenir l'indicateur synthétique global. Cet indicateur synthétique, compris entre 0 et 1, est considéré comme la probabilité d'atteindre les ODM. Une valeur proche de 1 indique que le pays ou le groupe de pays réalise de substantiels progrès pour l'atteinte des ODM alors qu'une valeur proche de 0 indique que les progrès sont insuffisants. La sensibilité de la méthodologie de calcul de l'indicateur synthétique est réalisée à l'aide des indices de Sobol et des M-estimateurs pour cinq facteurs d'incertitude identifiés.

***Mots clés :** Indicateur synthétique, Objectif du Développement pour le Millénaire (ODM), normalisation, agrégation, analyse de sensibilité*

1. INTRODUCTION

Most of the assessments that monitor the progress countries are making toward the attainment of the MDGs are based on the indicator tracking technique. Ideally, however, the goals are interlinked, as each of the first seven goals addresses an aspect of poverty. As such, it is safe to argue that they should be viewed together because they are mutually reinforcing. This paper therefore presents a summary of a methodology to compute a Composite MDG Index (CMI). The CMI in this case is a composite indicator based on the aggregation of MDG indicators. The indicator can be used to assess a country or group of countries in terms of the progress being made in attaining the MDGs, hence it is referred to as a Progress CMI (P-CMI). The P-CMI should be seen as a way of interpreting how a set of MDG indicators are evolving for a country with respect to other countries, in terms of achieving the MDGs by 2015 if the observed trend were to continue. It shows "at a glance" whether or not a country or group of countries will achieve the entire set of MDGs by 2015.

The methodology for computing the P-CMI is primarily based on the guidelines for constructing composite indices developed by the Organization for Economic Cooperation and Development (OECD). The development of the methodology has also benefited from other work carried out in this area (e.g. Rouzier 2003; ESCAP et al. 2005, 2006, 2007).

There are five main steps involved in the methodology to compute a P-CMI, namely: selection of countries and indicators; computation of the

expected years of achieving the targets; imputation of missing data; data normalization; and weighting and aggregation schemes. A summary of these steps is presented in the remainder of this paper. The full detailed version of the methodology is available from the Statistics Department (ESTA), African Development Bank. The methodology, however, is not yet finalized as it is still undergoing peer review and will likely incorporate further revisions.

2.   METHODOLOGY FOR COMPUTING THE PROGRESS CMI

2.1   Selection of countries and indicators

The first step in the methodology involves the selection of countries and indicators based on the following criteria. A country is selected if the percentage of missing values is 25% or below; an indicator is selected if the percentage of total population of countries without missing data is 75% or above. For a given indicator, a missing observation occurs for a given country whenever there are no data at all, or where the data available are such that two data points with at least 3 years apart cannot be found. Box 1 below illustrates the case of missing data.

Box 1: Illustration of Missing Data

Let us consider an indicator and four countries (C1, C2, C3 and C4). In the table below, 'Yes' means a data point is available and 'No' means a data point is not available.

Country	Years			
	1990	2000	2001	2002
C1	Yes	Yes	No	No
C2	No	Yes	Yes	Yes
C3	No	Yes	No	No
C4	No	No	No	No

C1 has two data points (i.e. 1990 and 2000) and the number of years apart is 10 (2000-1990=10). Hence, a trend can be computed.

C2 has three data points (i.e. 2000, 2001, and 2002). The number of years apart between the baseline and the latest year is 2 (2002-2000 = 2). Hence, in this case, C2 has a missing value for this indicator.

C3 has one datum and C4 has no data. Hence C3 and C4 have missing data.

2.2 Computation of the expected years of achieving the targets

In the second step, the expected year of achieving a target is computed based on the assumption that the upward trend or increasing indicator (e.g. Net primary school enrollment rate) follows a linear model and the downward trend or decreasing indicator (e.g. Under-five mortality rate) follows a geometric model. The relation between the earliest value and the latest value is expressed in a linear model by:

$$Y_{Lst} = Y_{Fst} + q(Lst - Fst) \qquad (1)$$

In a geometric model this relation is expressed as:

$$Y_{Lst} = Y_{Fst} (1 + r)^{Lst - Fst} \qquad (2)$$

The following notations are used in this relation: *Lst* and *Fst* are respectively the earliest and latest year, *Y* is the indicator value, and *q* and *r* are respectively the average yearly increase and the average growth rate. In addition to the model assumption, when the value of the 1990 baseline is unknown, an estimation of the 2015 value is carried out, based on the earliest value, by assuming that the required trend crosses three points: the 1990 baseline, the 2015 target, and the earliest point (supposed to be after the 1990 baseline). Therefore, three equations are required: two for computing the expected year of achieving a target. The equations and their solution for upward trend and downward trend are presented in the table below with the following notation: T_0 is the 1990 baseline year, T is the 2015 target year, *Fst* is the earliest year, *Lst* is the latest year, $\propto$ is the authoritative trend, q_a and q_r while r_a and r_c are the actual trend and the required trend to reach the target for upward and downward trend indicator, respectively; $\lambda = 1 \big/ {(T - Lst + 1)}$ is the weight of the required trend.

Type of trend for indicator	Upward	Downward
Initial equation	$\begin{cases} Y_{Fst} = Y_{T_0} + q(Fst - T_0) \\ Y_T = Y_{Fst} + q(T - Fst) \\ Y_T = (1 + \alpha)Y_{T_0} \end{cases}$	$\begin{cases} Y_{Fst} = Y_{T_0}(1 + r)^{Fst - T_0} \\ Y_T = Y_{Y_{Fst}} + q(T - Fst) \\ Y_T = (1 + \alpha)Y_{T_0} \end{cases}$
Expected value in 2015	$Y_T = Y_{Fst}\left(\dfrac{(1 + \alpha)(T - T_0)}{T - (1 + \alpha)Y_0 + \alpha Fst} \right)$	$Y_T = Y_{Y_{Fst}}(1 - \alpha)^{\left(\frac{T - Fst}{T - T_0}\right)}$
Expected year of achieving the target	$T = Lst + \dfrac{Y_T - Y_{Fst}}{q_d}$	$T = Lst + \dfrac{\log\left(Y_T \big/ Y_{Fst}\right)}{\log(1 + r_d)}$
Where	$q_d = \lambda q_r + (1 - \lambda)q_a$	$r_d = (1 + r)^{\lambda}(1 + r)^{(1 - \lambda)} - 1$

The derivation of the above equations is presented in Annex 1.

2.3   Imputation of missing data

The third step involves the imputation of data using the multiple imputations (MI) method. The "aregImpute" function of the library "Hmisc" in the R software is used to carry out the imputations. The procedure is that

for each missing expected year of achieving the target, five values are provided and the mean of these five values is considered as the final estimated missing value. The assumption of the multiple imputations is that: under uncertainty of the missing values, its imputed value is an average of N estimates. The N estimates are obtained using a regression model or a multinomial distribution. The Markov Chain Monte Carlo (MCMC) method is used for each of the N estimates. The MCMC assumes that the distribution of the current element depends on the value of the previous one; the first value is estimated from the dataset without the missing values; the expected maximum (EM) algorithm is run to select the other value.

2.4 Data normalization

In the fourth step, the categorization rule is used as a normalization scheme for computing the P-CMI. For each indicator, a country is 1 if the year of achievement is by 2015 and 0 otherwise. Category 1 may be referred to as "*likely to achieve the target by 2015*" and category 0 as "*not likely to achieve the target by 2015*". The use of two categories is helpful in interpreting the P-CMI as a proportion.

2.5 Aggregation and weighting schemes

The fifth and last step involves the aggregation and weighting procedure that is carried out for each country. This procedure is carried in three stages. First, an aggregate index for each target is computed by averaging category values of indicators (these categories are 0 and 1 as defined at the normalization step). Therefore, for a given target, the aggregate index is a proportion of indicators with category 1 (i.e. likely to achieve the goal by 2015), which is an estimate of the probability of achieving the target. Second, an aggregate index for each goal is computed as the average indices for targets. For a given country, this index is the estimated probability of achieving the goal. Third and finally, *the P-CMI is computed as the average of indices for goals. For a given country, this index is the estimated probability of achieving the MDGs by 2015*. At each stage of aggregation mentioned above, equal weights are applied and the linear additive aggregation method is used. This procedure can be summarized by the following formula:

$$CMI^c = \sum_{j \in MDG} W_j \sum_{k_j \in G_j} W_{k_j} \sum_{i_{k_j} \in T_{k_j}} W_{i_{k_j}} I^c_{i_{k_j}} \qquad (3)$$

In the formula (3) above, the following notations are used:

- MDG is the set of the selected MDGs or all goals selected

- G_j is a set of targets relating to a given goal j

- T_{k_j} is a set of indicators relating to target k_j of goal j

- $I^c_{i_{k_j}}$ is, for country C, the normalized value of relating to target j

- $W_{i_{k_j}}$ is the weight of indicator i_{kj}. In our equal scheme $W_{i_{k_j}} = \dfrac{1}{\#T_{kj}}$ where $\#T_{kj}$ is the number of indicators in T_{kj} .

- W_{kj} is the weight of target k_j. In our equal scheme $W_{kj} = \dfrac{1}{\#G_j}$ where $\#G_j$ is the number of targets in G_j .

- W_j is the weight of goal j. In our equal scheme $W_j = \dfrac{1}{\#MDG}$ where $\#MDG$ is the number of goals in MDG

Let us identify terms of the formula (3)

o The quantity $\sum\limits_{i_{k_j} \in T_{k_j}} W_{i_{k_j}} I^c_{i_{k_j}}$ is an unbiased estimator of the probability of achieving target T_{kj} given the set of available information (which is the subset of indicators) since $I^c_{i_{k_j}}$ can be modeled as Bernoulli variable.

o The quantity $\sum\limits_{k_j \in G_j} W_{k_j} \sum\limits_{i_{k_j} \in T_{k_j}} W_{i_{k_j}} I^c_{i_{k_j}}$ is an unbiased estimator of the probability of achieving goal G_j given the set of available information which is the subset of targets where each target has its own probability

   to be achieved estimated by the quantity $\sum\limits_{i_{k_j} \in T_{k_j}} W_{i_{k_j}} I^c_{i_{k_j}}$.

o Finally, the quantity CMI^c is the probability of achieving the MDGs for country C based on the set of available information which is made of the selected goals where each goal has its own probability to

   be achieved estimated by the quantity $\sum\limits_{k_j \in G_j} W_{k_j} \sum\limits_{i_{k_j} \in T_{k_j}} W_{i_{k_j}} I^c_{i_{k_j}}$

3.   SENSITIVITY ANALYSIS OF THE METHODOLOGY

In order to assess the robustness of the methodology, a sensitivity analysis was performed on the basis of *five factors of uncertainties*[3] identified as: the inclusion/exclusion of indicators one by one; methods used for imputation of missing data; normalization rules; weighting schemes; and aggregation rules. For each factor, the alternative choices were assessed, for example: multiple imputations versus unconditional mean imputation for imputing missing data; categorization versus standardization (using z-scores) for normalization method; equal weights versus Principal Components Analysis and indicator variance for weighting schemes; and additive aggregation versus Principal Components Analysis for aggregation rule. A uniform distribution is assigned to each factor to carry out the selection procedure.

Sobol's indices are computed using "brute force approach" on the basis of the methodology as measures of sensitivity analysis. Furthermore, to assess the robustness of the overall P-CMI to outliers,[4] two M-estimators are computed: the *trimmed mean* and the *Winsorized mean*. The results obtained from the sensitivity analysis were adequate to confirm the robustness of the methodology.

4.   CONCLUSION

A key issue that has been of concern and raised through some ongoing peer reviews, is the assumption to use two models, i.e. a linear model for upward indicator and geometric model for downward indicator. This assumption has, however, been justified and used by UNESCAP (2007). It may, however, be argued that normally, for each indicator, the selection of a model should be based on the data profile of each country. Therefore, there may be a need to carry out a cross-section study for identifying the underlying model for each indicator and each country in view of the data limitation.

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[3]   Uncertainty refers to the error due to the fact that for a given factor, one possibility is chosen for the reference methodology among several. The sensitivity analysis assesses this error for each factor.

[4]   Outliers are extreme P-CMI.

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ANNEX 1: COMPUTATION OF THE TARGET VALUE

Notation: T_0, Fst and T are respectively the 1990 baseline year, the earliest and the 2015 target year, Y is the value, q is the average yearly increase, r is the annual growth rate and α is the required rate of change specified by the MDGs ($\alpha = \frac{1}{2}$ for Share of poorest quintile in national consumption, $\alpha = \frac{2}{3}$ for Proportion of births attended by skilled health personnel).

1.1   Computation of the target value for upward trend indicator

Let us consider the following system (where Y_T, Y_{T_0} and q are unknown variables).

$$\begin{cases} Y_{Fst} = Y_{T_0} + q(Fst - T_0) \ (1) \\ Y_T = Y_{Fst} + q(T - Fst) \ (2) \\ Y_T = (1 + \alpha)Y_{T_0} \ (3) \end{cases}$$

We want to derive Y_T based on Y_{Fst} and α.

From (1) and (2), it comes that

$$q = \frac{Y_{Fst} - Y_{T_0}}{Fst - T_0} = \frac{Y_T - Y_{Fst}}{T - Fst}$$

Therefore

$$Y_{T_0} = Y_{Fst} - (Y_T - Y_{Fst})\frac{Fst - T_0}{T - Fst} \ (4).$$

Using (4) in (3), it comes that:

$$Y_T = (1 + \alpha)\left(Y_{Fst} - (Y_T - Y_{Fst})\frac{Fst - T_0}{T - Fst}\right)$$

Grouping terms in Y_T and Y_{Fst}, it comes that

$$Y_T\left(1 + (1 + \alpha)\frac{Fst - T_0}{T - Fst}\right) = Y_{Fst}(1 + \alpha)\left(1 + \frac{Fst - T_0}{T - Fst}\right)$$

which is equivalent to

$$Y_T(T - Fst + (1 + \alpha)(Fst - T_0)) = Y_{Fst}(1 + \alpha)(T - T_0)$$

Finally,

$$Y_T = Y_{Fst}\left(\frac{(1 + \alpha)(T - T_0)}{T - (1 + \alpha)T_0 + \alpha\, Fst}\right)$$

1.2 Computation of the target value for downward trend indicator

Let us consider the following system (where Y_T, Y_{T_0} and r are unknown variables):

$$\begin{cases} Y_{Fst} = Y_{T_0}(1 + r)^{Fst - T_0} \ (1) \\ Y_T = Y_{Fst}(1 + r)^{T_0 - Fst} \ (2) \\ Y_T = (1 - \alpha)Y_{T_0} \quad (3) \end{cases}$$

We want to derive Y_T based on Y_{Fst} and α.

From (1) and (2), it comes that[5]

$$log(1 + r) = \frac{log(Y_{Fst}) - log(Y_{T_0})}{Fst - T_0} = \frac{log(Y_{T_0}) - log(Y_{Fst})}{T - Fst}$$

Therefore,

$$log(Y_{T_0}) = log(Y_{Fst}) - (log(Y_T) - log(Y_{Fst}))\frac{Fst - T_0}{T - Fst} \ (4).$$

Using (4) in (3), it comes that:

$$log(Y_T) = log(1 - \alpha) + \left(log(Y_{Fst}) - (log(Y_T) - log(Y_{Fst}))\frac{Fst - T_0}{T - Fst}\right)$$

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[5] Computations are carried out after applying the logarithm function on equation 1, 2 and 3 to obtain a linear system

Grouping terms in Y_T and Y_{Fst}, it comes that

$$log(Y_T)\left(1 + \frac{Fst - T_0}{T - Fst}\right) = log(1 - \alpha) + log(Y_{Fst})\left(1 + \frac{Fst - T_0}{T - Fst}\right)$$

which is equivalent to:

$$log(Y_T)(T - T_0) = (T - Fst)log(1 - \alpha) + log(Y_{Fst})(T - T_0)$$

which is equivalent to:

$$log(Y_T) = \frac{T - Fst}{T - T_0}log(1 - \alpha) + log(Y_{Fst})$$

which is equivalent to:

$$log(Y_T) = log(1 - \alpha)^{\frac{T - Fst}{T - T_0}} + log(Y_{Fst})$$

which is equivalent to:

$$log(Y_T) = log\left[Y_{Fst}(1 - \alpha)^{\frac{T - Fst}{T - T_0}}\right]$$

Finally,

$$Y_T = Y_{Fst}(1 - \alpha)^{\left(\frac{T - Fst}{T - T_0}\right)}$$

Improving Rural and Agricultural Statistics through Harmonization[1]

Patrice K. Wadja[2], Abdoulaye Adam[3] and Michel Mouyelo-Katoula[4]

Abstract

This paper focuses on the selection of indicators using the logical framework in the context of rural and agricultural statistics. A dynamic planning and management tool, the logical framework lays out the project inputs, outputs, outcomes, and impact. The paper presents the outcome and impact indicators as well as the measurement of results and impact. The paper concludes with reference to harmonization at the international level.

Key Words: *Statistics harmonization, Indicators, Monitoring and Evaluation*

Résumé

Cet article met l'accent sur le choix des indicateurs à l'aide du cadre logique dans le contexte des statistiques rurales et agricoles. En tant qu'outil dynamique de planification et de gestion, le cadre logique met en relief les intrants, les extrants, les résultats et l'impact du projet. L'article présente les indicateurs de résultats et d'impact ainsi que l'évaluation des résultats et de la mesure de l'impact. La conclusion de l'article fait référence à l'harmonisation au niveau international.

Mots clés : *Harmonisation statistiques, Indicateurs, Suivi-évaluation*

1.   INTRODUCTION

Harmonization is central to the process of monitoring development goals at the international level, and particularly for agriculture and rural development goals. Although some of the indicators are already available in the United Nations Food and Agricultural Organization (FAO) statistical database, for several countries, the series are either non-existent or partial. In an attempt to address this problem, the paper presents a framework

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for indicators which allows for performance and results monitoring before referring to harmonization at the international level.

2.   A LOGICAL FRAMEWORK FOR INDICATORS

The way in which a poverty monitoring system is formulated remains essentially the same, although its contents may vary from one country to the next. The approach is not limited to poverty monitoring but can be applied to any sector for which statistical information needs to be collected and analyzed.

The procedure is based on the idea of the logical framework, which describes the project development in terms of inputs which are combined together to produce outputs, which in turn produce outcomes, and finally result in a project impact. The logic of this approach is that if the inputs are not available in the right quantities at the right time, then the delivery of the outputs will be adversely affected. Similarly, if the outputs are not generated according to plan, then the expected outcomes will not be forthcoming, and this in turn will affect the overall impact. It is therefore necessary to ensure that there are appropriate monitoring activities for each of the levels.

The logical framework is generally used for project design and is a practical tool to better comprehend the logic that characterizes the development process. In addition, it provides a structure for developing a project monitoring and evaluation (M&E) system that includes all stages of the project from identification to completion. There is a belief that the process of monitoring progress, or the lack thereof, at each of the levels will be facilitated once the logic of the project has been defined using the logical framework. With that logic, the information needed for monitoring the project's success is likely to be reduced to a relatively small number of key indicators.

The process of developing a monitoring and evaluation program/intervention involves four steps, which are designed to address the following questions:

1. What information is needed?
2. What tools do we have? What tools do we need?
3. What outputs should the system generate? Who will produce them?
4. What resources are needed to implement the program?

This approach should help to guarantee that core data needs have been identified, a work program established, and an institutional framework defined.

Therefore, during the project's life, the M&E system should be producing well-timed reports on project progress. Ultimately, enough information should be collected for an evaluation to be conducted to inform the appropriate stakeholders on whether the project has achieved its expected objectives and to highlight any unexpected outcomes.

A substantial part of the literature has been devoted to the selection of appropriate indicators, and a number of lists have been prepared on possible indicators for monitoring different types of projects. However, these documents are difficult to apply in general. The list of indicators is exhaustive and the underlined data usually cannot be secured with the necessary precision or regularity. The starting point in the selection of indicators should be the issue of measurement. This provides a framework in the process of identifying a minimum list that requires the lightest of monitoring and evaluation arrangements. Still, with the broad needs of the users, the number of possible indicators is important. The actual selection of indicators should be a participatory activity involving the key stakeholders. This paper outlines a systematic approach that can be used to help harmonize the most critical indicators that need to be selected.

3.   IDENTIFYING THE REQUISITE INDICATORS

With the application of the logical framework approach, the requisite information can be grouped into four general categories. Information is needed for:

- *Input monitoring* to monitor the level of resources being assigned to services and programs intended to reduce poverty;
- *Output monitoring* to monitor the delivery of the sectoral services designed to reduce poverty (e.g. the delivery of such services as agricultural extension advice);
- *Beneficiary monitoring* to measure which population groups have access to poverty alleviation programs and projects, the extent to which they make use of them, and the degree to which these programs and projects meet the beneficiaries' needs;
- *Impact evaluation* to measure the overall impact of policies on welfare conditions and poverty levels.

3.1 Performance monitoring

Performance (inputs and outputs) is the "implementation" or "efficiency," and measures actual against expected results; it is a measure of the quality of management. In general, it covers all four levels of the logical framework causal chain. However, it focuses mostly on the bottom-end inputs and outputs and on how efficiently the project can convert inputs into outputs.

Performance indicators are measures that describe how well a project/program is achieving its objectives. Whereas a results statement identifies what the project/program hopes to accomplish, indicators tell specifically what to measure to determine whether the objective has been achieved.

Indicators are usually quantitative measures but may also be qualitative observations. They define how performance will be measured along a scale or dimension, without specifying a particular level of achievement. (Planned levels of achievement – targets – are separate from the indicators themselves.)

Performance indicators are at the heart of a performance monitoring system; they define the data to be collected to measure progress and enable actual results achieved over time to be compared with planned results. Thus, they are an indispensable management tool for making sound performance-based decisions about program strategies and activities.

Performance monitoring is in large measure a financial monitoring exercise, such as is carried out in a public expenditure review. It also involves monitoring the availability of human and material resources. The main sources of information are project information. Similarly, program monitoring draws information primarily from relevant project information, statistics, and makes no special demands on the national statistical service for information. In other words, it is the tracking of human and financial resources and the recording of how they are translated into outputs (project goods and services). Consequently, it includes financial monitoring and the analysis of financial records.

In addition to generating financial reports, the recorded data are used for cost-benefit analysis and analysis of costs per unit of output, etc. Cost data can easily be aggregated and merged with other data sets at higher levels. Input and output indicators are mostly used for monitoring the performance of the projects. It is therefore relatively simple to integrate

performance monitoring indicators into higher-level (regional or global) tracking systems. Input and output indicators are usually simple to construct, and most of the information is available in project accounts and records. Because they track project interventions at a relatively detailed level, they also tend to be very numerous. This is useful for the project manager but such an amount of detail is really not needed further up the management chain. Significant parts of the indicators, particularly output indicators, are non-financial.

It is the top two levels – impact evaluation and beneficiary monitoring – which make the greatest demands on special data collection exercises. Moreover, it is at the level of beneficiary monitoring that the demand for harmonization and core indicators is strongest. A results-based system attaches the highest importance to providing feedback on outcomes and goals, rather than on inputs and outputs. Table 1 presents the chief characteristics of the different classes of indicators below.

3.2   Results monitoring

The change in emphasis from performance monitoring to results monitoring has important implications for M&E. With performance monitoring, the data are relatively easily available from internal institutional information systems; however, results monitoring turns to the targeted beneficiaries (clients) for information on the project and how it has affected them.

A critical objective of monitoring outcomes (results) is to underscore who is benefiting from the development intervention, and how. At the same time, it is also important to collect information about the clients who are *not* benefiting and to comprehend why. This process of data collection needs to be done while the development intervention is being implemented in order to activate corrective action.

To make the task easier, it has now become general practice to separate the short-term indicators from the medium- to long-term indicators (which equate more closely to indicators that would be used to measure impacts). For the short-term indicators, rapid reporting now becomes a critical factor, which in turn affects the choice of indicator. Indicators that change slowly are not good indicators for measuring short-term outcomes, nor are those that are subject to extreme random fluctuations, that exhibit a long time-lag; or that take time and are expensive to measure.

Table 1: Characteristics of Different Classes of Indicator

	Logical Framework Levels	M&E Activity	Characteristics of Indicator	Frequency of Reporting
Results *Changes resulting from the presence of the project or program*	IMPACT	Evaluate results	Indicators may move slowly and be difficult to measure. They must show evidence of change, while analysis must establish the extent to which change is attributable to project/program being evaluated. They are derived from ongoing monitoring activities plus dedicated evaluation studies.	5 years and over
	OUT-COMES	Assess results	Indicators should respond quickly and be easy to measure. They should measure the extent to which beneficiaries have changed behavior due to the project. Typical indicators include access, use and satisfaction with project services. Sources include surveys of beneficiaries and service providers and service delivery data from surveys and administrative records	1-5 years
Performance *(Efficiency of the project or program)*	OUTPUTS	Track delivery of goods & services	Indicators are at the heart of a performance monitoring system. Outputs are generated by the project/program. Outputs may include physical outputs, services, training, advice, etc. Sources include Management Information System and administrative records.	6-18 months
	INPUTS	Monitor resources and activities	These indicators relate to physical, human and financial resources. Sources include Management Information System and administrative records.	Quarterly to annual

Source: Adapted from Tracking Results in ARD in Less-Than-Ideal Conditions: A Sourcebook of Indicators for Monitoring and Evaluation*, Donor Platform, FAO, World Bank 2008.*

What is needed are indicators that respond quickly and that are easy to collect. Again, it should be possible for them to be disaggregated and presented for different subgroups of the population (e.g. women) and also be aggregated upward and used to calculate indicators at the national, regional, or global level.

3.3   Impact evaluation

The impact evaluation objective is to determine the impacts of an agriculture and rural development project/program. To that end, a comparison group is needed to measure what would have happened to the project beneficiaries had the program not taken place. The process of identifying this specific group, collecting the needed data, and conducting the relevant analysis requires a lot of careful, thorough planning.

The task of identifying a comparison group is challenging. A number of countries are now moving to household surveys that do not involve the collection of consumption data, but which instead collect easy-to-measure indicators of household wellbeing. Such indicators may include, inter alia: asset ownership, the mean number of persons per room and the number of unemployed adults. These data are used to create a composite poverty index, later used to rank households and group them into poverty deciles. Once this point has been reached, comparisons can be made between deciles. The point is that it is possible to identify and isolate those comparison groups that are at the bottom end of the distribution – and to observe whether they are deriving any direct benefit from the various agriculture and rural development programs.

Good impact evaluation gives the basis for fine policymaking. It provides evidence as to whether or not the project has achieved its impact, how large the impact is, and who has benefited (or not). Impact evaluation can be used as a results-based tool in addition to providing hard evidence which can be used to weigh and justify policy priorities. As the evaluation progresses alongside the intervention, it can be used to test features of the project and, where necessary, to modify design and improve effectiveness over time. Among other things, impact evaluations can help policymakers to examine the effect of a pilot, compare different delivery modes, and examine the impact of the project for different segments of population.

Overall, impact evaluation allows us to learn which projects work in which contexts, and to use these lessons to inform the next generation of policies not only in the project country, but also across countries. Finally, the exercise of carrying out an impact evaluation helps to build and sustain national capacities for results-based policymaking.

There is no standard approach to conducting an impact evaluation. Each impact evaluation has to be tailored to the specific project/program, country and institutional context, and the actors involved. That said, there are

some general aspects and actions that bear on the success of any impact evaluation.

A good impact evaluation is not an isolated exercise; rather, M&E are parallel and complementary activities. It is important to understand that monitoring is an activity that takes place at the beginning of the project, whereas evaluation takes place at the end. Wherever and whenever there is a monitoring activity, there needs to be a regular process of review – of questioning what the data mean, and of thinking through the implications for policy and for the future. Hence, both monitoring and the evaluation are continuous activities throughout the life of the project. On one side, the impact evaluation implies a familiarity with the project, the country, and the institutional context, the design options that are being considered, and the details of the rollout and execution. On the other side, key stakeholders need to embrace the logic of the evaluation, and to identify which project design and implementation elements will be critical in order to carry out an evaluation that will contribute to the success of the project.

It is generally thought that impact evaluation has to be multifaceted and data-demanding. This is not the case: there are a range of available types and methods of evaluation that do not require much in the way of additional data, including project reviews, interviews with key stakeholders, focus group meetings, performance audits, etc. However, as one progresses up the results chain, impact evaluation can become more and more challenging, and therefore require more data. Early in the implementation, impact evaluation may be no more than the annual review of inputs and outputs to guide the allocation of further resources during the next year. The problems appear further up the chain.

Impact evaluation and impact analysis are analytical tasks that extend way beyond the analysis of simple indicators. Impact analysis may be undertaken at any level, including project, sector, or country. Ideally, it requires information on key indicators at three stages: before (baseline data), during, and after the specific intervention or reform. It may involve the setting up of a quasi-experimental design that controls for sample characteristics and permits testing against counterfactual hypotheses so as to compare both the before/after situation and the with/without situation. The complete evaluation should also identify any unexpected or unanticipated outcomes.

To protect flexibility, the impact evaluation must be planned as early as possible. While there may be considerable uncertainty regarding the project

interventions at the early stages, by understanding the potentially large set of design options, the evaluation impact team will be in a better position to identify evaluation options. Flexibility also demands close attention to the political environment. The evaluation team needs to identify and communicate with relevant constituencies who may support or oppose the evaluation; they also need to keep an eye on how these constituencies may shift during the life of the evaluation.

There may be some concern about achieving the objectives of the evaluation within the timeframe of the project. Even though a number of the impacts should be observable early on, others may only be captured beyond the project life. Constructing a sufficient results framework that takes the project timeline into account will help craft a realistic evaluation. Therefore, the identification and collection of outcomes and indicators that make known the timing of the project and the evaluation will be essential. A financial strategy that allows for evaluation beyond the project life will be critical for longer-term outcomes.

It is important that, where an impact evaluation is being planned, the expected path that the analysis will take is mapped out as early as possible. In this way, the data requirements can be assessed and addressed accordingly. The process that has just been described for the selection of outcome indicators is in itself a preparation for an impact analysis further down the road. It sets out a specific conceptual framework and identifies channels through which the program/project services are to be transmitted. It is also important for consideration to be given in advance to the way indicators are to be selected, so that the impact on gender and on the environment can be extracted and evaluated.

If careful thought is given at the very start of the project to the selection of indicators to be monitored, and if they are selected so that they capture the most critical stages of the expected transmission mechanisms, then the additional data demands of the evaluation can be minimized.

A number of lessons have been learned for those operating in difficult conditions. They include the following:

- Some projects/interventions do not need complete impact evaluations and such evaluations should focus on the eventuality of lessons to be learned.
- Routinely monitoring data collected may serve for the evaluation purposes.

- Future data needs can be anticipated at the beginning of the program.
- Since most projects/interventions align toward a particular common goal, it is useful to consider certain aspects in the evaluation of impacts at the sectoral or country level rather than at the project level.
- Qualitative studies should serve where quantitative data are not available.
- Where there is a clear need for serious evaluation, this needs to be planned well in advance, to include both qualitative and quantitative studies, and to take into account both expected and unexpected outcomes. This will almost certainly involve combining data from various different sources, and reaching a considered view about the impact of a particular intervention. The implications of such a research agenda, with respect to the data needs, are considerable.

4.   IDENTIFYING AND PRIORITIZING A SET OF INDICATORS

The objective here is to identify and prioritize appropriate indicators by bringing together all the indicators that have been discussed to this point and linking them to the indicators for monitoring national development objectives.

It is important to standardize and effectively monitor how the project/ intervention is being implemented, since this is critical to the performance evaluation and to the assessment of whether the objectives of the project/ intervention are being met. The examination of indicators on an annual basis will also track progress toward the achievement of wider national development objectives. Monitoring will also help to inform decisions regarding any steps that may be required to review policies and implementation measures.

Performance indicators were identified and the results indicators were grouped into different indicators for monitoring results. Subsequently, the focal point was on the outcome indicators, although there is a different set of outcome indicators that is equally important. This different set of outcome indicators comprises those not directly project-specific and those linked to several projects. These consist of macro- and national-level indicators and indices. These indicators shift as a result of broad policy changes or as a result of the combined effects of several programs or interventions. They include agricultural exports, food production, fertilizer use, imports, and price indices. They also include some of the more common

multisectoral indicators to contrast rural and urban areas, and to assess the results of the combined package of policies and programs identified in national development strategies. Such indicators might include: GDP per capita; the percentage of population living in poverty; urban/rural assessment of multisector indicators such as prevalence of underweight children under 5 years of age; the ratio of girls to boys in primary and secondary education; and the percentage of population with sustainable access to improved water supply, etc.

It is certainly not an easy task to come up with an identified set of indicators that meets everyone's requirements because different countries and users at different stages not only have diverging information needs, but also their own specific goals. The selection approach can be guided, however, by drawing on the experience of what other countries have done in the past. In that context, Annex 1 offers a set of choices of indicators that different countries and users can use to help them prioritize and select the most functional indicators for their development stage needs. The annex includes examples of good practices taken from different countries around the world.

Harmonization is critical for monitoring development goals at the international level, particularly for agriculture and rural development goals. In that context, a subset of 19 essential indicators has been selected from Annex 1 and chosen as priority indicators (highlighted in bold in the Annex). Some of these indicators are already available in the FAO statistical database (FAOSTAT). However for a number of countries, the series are either non-existent or partial, in addition to having significant gaps or figures that have been filled by imputation. Clearly, the international series are in need of urgent upgrading, but an important point is that the quality of the series can only be improved if all countries commit to maintaining the same indicators at national level, and also agree on common standards. These 19 essential indicators represent the minimum set that all countries need to maintain and update on a regular basis. Without this minimal guarantee at the national level, it will be very difficult to improve the quality of M&E at the international level. But this exercise of committing to maintaining a minimal set should not be seen as an additional load, since the same selected set of indicators serves not only to monitor at the international level, but also at a national level.

The selected set of indicators on their own are not sufficient to meet all monitoring and evaluation data needs; rather they should be viewed as an essential subset that needs to be incorporated in all national M&E

interventions. Table 2 presents 19 key harmonized indicators to track progress against identified goals, long-term outcomes and the achievement of objectives in agriculture and rural development intervention. Generally, it is essential to keep data collection to the minimum; thus, where possible, readily available published sources should be used alongside nationally sourced statistics, such as those published by the National Statistics Office. Where required, these will need to be supplemented by local surveys, including the established annual housing and non-residential development surveys undertaken by the countries.

The 19 priority indicators set out in Table 2 have been chosen on grounds of comparability, availability, and relevance. The table provides six indicators that are useful for measuring general sector performance of agriculture and rural development. One specific indicator each is incorporated for crop, livestock, fishery and aquaculture, forestry, rural finance, agricultural research extension, irrigation, and the agribusiness subsectors. Four indicators are included for thematic areas related to agriculture and rural development, four for community-based rural development, and one for land policy and administration.

It is not enough, however, simply to develop a list of desirable indicators without at the same time identifying the data needed to calculate them. Thus, linked to the concept of the priority indicators is the idea of maintaining a set of core statistical data series to underpin the indicators. Once these statistics are added together, the modest list of data requirements starts to grow very rapidly, with significant implications for the National Statistical System (NSS). This "shopping list" of data needs provides the basis for a dialogue with the suppliers. For most of the outcome indicators, this will be the National Statistical Office. It may also include other agencies that make up part of the NSS. The objective of the dialogue is to negotiate arrangements for a program of survey activities that will ensure the delivery of the appropriate data according to the timeline specified.

Table 2: List of 19 Priority M&E Indicators

	General Agriculture and Rural Development
	General Agriculture and Rural Development
1	Public spending on agriculture as % of GDP from agriculture sector
2	Public spending on agricultural subsidies as % of total public spending on agriculture
3	Prevalence (%) of underweight children under 5 years of age in rural areas
4	Food production index
5	% annual growth in agricultural value added
6	Rural poor as a proportion of total poor population
	Crops (inputs and services related to annual and perennial crop production)
7	% change in yields of major crops of the country
	Livestock
8	% annual growth in value added of livestock
	Fisheries and Aquaculture
9	Fish production as % of existing stock (or a rating of state of major capture fish stocks relevant to exports and local food)
	Forestry (developing, caring for, or cultivating forests; management of timber production)
10	% of land area covered by forest
	Rural Micro and SME Finance
11	% of the rural population using financial services of formal banking institutions
	Agricultural Research and extension
12	Public investment in agricultural research as a % of GDP from agriculture sector
	Irrigation and Drainage (services related to water use in agriculture)
13	% of users who report significance increase in crop yields as a result of provision of irrigation and drainage services
	Agribusiness (agricultural marketing, trade and agro-industry)
14	% change in sales/ turnovers of target agro-enterprises
	Community-based Rural Development
15	% of target farmers who are members of producer organizations
16	Agricultural withdrawal as % of total freshwater withdrawal
17	Ratio of area protected to maintain biological diversity to surface area of the country
18	% change in soil loss from project watersheds
	Land Policy and Administration
19	% land area for which there exists a legally recognized form of land tenure

Source: Adapted from Tracking Results in ARD in Less-Than-Ideal Conditions: A Sourcebook of Indicators for Monitoring and Evaluation*, Donor Platform, FAO, World Bank, 2008.*

5.   CONNECTING INTERVENTIONS, OUTCOMES, AND IMPACTS

The decisions on what and how to monitor cannot be made independently from the definition of goals, objectives, interventions, and targets; these should all relate to one another in a logical way. Establishing these logical relationships is a large part of developing an effective M&E system.

In particular, it can be difficult to establish cause and effect relationships between the outcomes of interventions (the direct results of the project's activities) and impacts, in terms of the project's larger goals and objectives. This is because impacts not only take time to emerge, but also because progress on the ground can rarely be attributed to a single intervention. Usually, it is the product of multiple interventions – not all of which lie within the project's scope of action – which are often too numerous and/or complex to feasibly monitor. That said, there are various approaches that can be adopted to get around this impasse, by:

- Making initial assumptions regarding causal links explicit and regarding these as hypotheses that the M&E will test;
- Identifying interventions outside the project that could influence impacts and choosing which ones to monitor based on the likelihood and potential degree of weight;
- Setting and monitoring short-, medium-, and long-term targets; and, most importantly,
- Developing an M&E system that is geared toward learning and adaptation.

6.   CONCLUSION

In M&E, it is important to develop indicators to monitor all the key links in a chain of results or logical hierarchy. Without developing and analyzing indicators together in the context of a logical chain of results, it is difficult to identify the problem when goals and objectives are not reached. A good M&E system will also take into account possible tradeoffs and unintended consequences involved in any course of action. The key point here is that indicators cannot be identified in isolation: they must emerge from agreed goals and objectives, and the actions needed to achieve them.

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NOTE TO ANNEX 1: EXTENDED LIST OF INDICATORS

Background

Annex 1 that follows provides an extended list of 87 indicators for measuring early outcome, medium-term outcome and long-term outcome, to serve as a menu for M&E professionals working in agriculture and rural development. Along with each indicator in the menu, related core data requirement, data sources, and technical notes and further references have been provided. For reference to the thematic group of agriculture and rural development, Annex 1 includes the 19 priority indicators which have already been presented in Table 2 – these are highlighted in bold in the Annex. The Annex indicators have been split in three categories:

A. *Sector-Wide Indicators for Agriculture and Rural Development*

B. *Specific Indicators for Agriculture and Rural Development:* Crops, Livestock, Fisheries and Aquaculture, Forestry, Rural Micro and SME Finance, Agriculture Research and Extension, Irrigation and Drainage, and Agribusiness

C. *Indicators for Thematic Areas related to Agriculture and Rural Development:* Community-based Rural Development, Natural Resources Management, Land Policy and Administration, and Policies and Institutions.

ANNEX 1: AN EXTENDED MENU OF INDICATORS

Sl. No.	Indicators	Core Data Requirements	Data Sources
Priority Indicators			
A SECTOR-WIDE INDICATORS FOR AGRICULTURE AND RURAL DEVELOPMENT			
1. Early outcome			
1	**Public spending on agriculture as a % of GDP from agriculture sector**	Budget level items; Government spending level items; disbursements; national agriculture value added data	Ministry of Finance; National Accounts; National Planning Commission; donor county reports
2	**Public spending on agricultural subsidies as a percentage of total public spending on agriculture**	Budget level items; Government spending level items; disbursements	Ministry of Finance; National Planning Commission; donor county reports
3	**Prevalence (%) of underweight children under 5 years of age in rural areas**	Anthropometric data	Anthropometric surveys
4	Indicators of access, use, satisfaction with transport and communications services		Ministry of Transportation; national transportation statistics; transport/communication services providers association; user surveys
5	% of population who consider that they are better off now than 12 months ago		Special household surveys
2. Medium-term Outcome			
6	**Food production index**	Crop area; production and yield data for major crop; livestock numbers and yields; felling rate; fishery production statistics	Fishery statistical system. Disaggregated data used for compilation of National Accounts Statistics.
7	**% annual growth in agricultural value added**		National Accounts arm of National Statistics Office

3. Long-term Outcome

Sl. No.	Indicators	Core Data Requirements	Data Sources
8	**Rural poor as a proportion of total poor population**	Household income and consumption estimates	Household income and consumption surveys
9	% change in proportion of rural population below USD1 (PPP) per day or below national poverty line	Incomes or consumption data (whenever possible consumption is preferred to income for measuring poverty)	Household budget surveys; other surveys covering incomes and expenditure; World Bank Development Research Group
10	% of the population with access to safe/ improved drinking water		Administrative or infrastructure national and subnational statistics; household surveys, Multiple Indicator Cluster Survey; demographic and health surveys, living standard measurement surveys; joint monitoring program for water supply & sanitation data (WHO & UNICEF) <http://www.wssinfo.org>
11	Consumer price index for food items		National Statistics Office
12	Agricultural exports as % of total value added in agriculture sector	Trade statistics; National Accounts statistics	National trade data; UN Statistics Division Key Development Data & Statistics
13	Proportion of under-nourished population	Data from household budget surveys	FAO national food security statistics; <http://www.fao.org/faostat/foodsecurity/index_en.htm>
14	Producer price index for food items	Prices received by domestic producers of food items	Prices surveys: <http://faostat.fao.org>
15	Ratio [or proportion] of arable land area to total land area of the country	Land use data	National Agricultural Statistics (Ministry of Agriculture, National Statistical Offices); FAO agricultural resources statistics <http://faostat.fao.org>
16	% change in unit cost of transportation of agricultural products		Unions of transport providers; national transportation companies.

Sl. No.	Indicators	Core Data Requirements	Data Sources
17	% of rural labor force employed in agriculture		Labour force surveys; population census; agricultural census; International Labor Organization : < http://laborsta.ilo.org/>
18	% of rural labor force employed in non-farm activities	Activity status rural household members, time worked in each activity	Farm labor data from National Census of Agriculture
19	% of the labor force underemployed or unemployed	Total and economically active population; employment and unemployment data; hours of work	National labor statistics; labor force surveys. International Labour Organization: <http://laborsta.ilo.org/>
20	Annual growth of household income in rural area from agricultural activity (%)		Annual income-expenditure surveys
21	Annual growth of household income in rural area from non-agricultural activity (%)		

B   SPECIFIC INDICATORS FOR SUBSECTORS OF AGRICULTURE AND RURAL DEVELOPMENT

B1 Crops (inputs and services related to annual and perennial crop production)

1. Early Outcome

Sl. No.	Indicators	Core Data Requirements	Data Sources
22	Indicators of access, use and satisfaction with services related to sustainable crop production practices, technologies and inputs, e.g., (i) % of small scale farmers who know about sustainable crop production practices (ii) % of farmers who applied/purchased the recommended package of inputs last season (iii) % of target farmers who adopted sustainable crop practices in their farms		Agricultural extension services; Sustainable crop production certifying bodies; Agricultural/Environmental Services. Analysis and studies made on the basis of data available from agricultural census and surveys

2. Medium-term Outcome

Sl. No.	Indicators	Core Data Requirements	Data Sources
23	**% change in yields of major crops of the country**	A time series of crop yields per unit of land area for major crops or crops covered by a specific program	Objective crop yield measurement surveys or other forms of assessment

Sl. No.	Indicators	Core Data Requirements	Data Sources
3. Long-term Outcome			
24	Yield gap between farmers' yields and on-station yields for major crops of the country	Yield expected to be achieved with recommended package of inputs, and actual yield as estimated through agricultural statistics system.	Crop surveys; claims of the agricultural research and extension system
25	& of total land area under permanent crops		Census of agriculture; current agricultural surveys
B2 Livestock			
1. Early Outcome			
26	Indicators of access, use, satisfaction with livestock services, e.g., • % of livestock owners in contact with livestock officer in the last month • % of livestock owners using veterinary services within the last month • % of livestock owners satisfied with the quality of livestock services		
2. Medium-term Outcome			
27	**% annual growth in value added in the livestock subsector**	Values of input used in livestock sector and output produced	National Accounts arm of National Statistics Office
3. Long term Outcome			
28	Livestock birth rate	.	Livestock surveys; estimates prepared by livestock specialists
29	% increase in yield per livestock unit	Per animal yield of milk, meat, wool etc., separately for each species	Livestock surveys; FAO yield livestock data: <http://faostat.fao.org/>
30	% change in livestock values	Livestock number and unit prices of livestock by species and breed	Department of Livestock, National Accounts arm of National Statistics Office

B3 Fisheries and Aquaculture

1. Early outcome

Sl. No.	Indicators	Core Data Requirements	Data Sources
31	Indicators of access, use, satisfaction with fisheries/aquaculture services, e.g., • % of fishing communities in contact with Fisheries Officer in last month • % of rural communities having constructed a fishpond in the last year • % of fishermen satisfied with the quality of fisheries services		Stakeholders surveys. Information available from extension wing of Department of Fisheries and Aquaculture
32	Water use per unit of aquaculture production	Production from aquaculture; water used in aquaculture production; number of aquaculture units and their water-holding capacity	Department of Fisheries; special surveys of aquaculture production units

3. Long-term Outcome

Sl. No.	Indicators	Core Data Requirements	Data Sources
33	**Capture fish production as % of existing stock (or a rating of state of major capture fish stocks relevant to exports and local food)**	Scientific estimates of fish stocks and exploitation rates; or perceptions/assessment of community of fishermen about increasing/ decreasing of fish stock	Institutions involved in estimation of fish resources; stakeholder survey on perceived state of fish stocks
34	Share of small-scale fishers in the production of fish	Average fish price; number of small-scale fishers or aquaculture producers; days of fishing; average weight per day of fishing	National fisheries surveys; estimates prepared by National Accounts wing of National Statistics Office
35	Fishing quota (% of total permitted catch) earmarked for local fishing communities as rights		Fishing regulatory bodies.
36	Annual change (in %) in production from aquaculture farms	Quantity and average unit price of different products from aquaculture.	Department of Aquaculture; National Statistics Office

B4 Forestry (developing, caring for, or cultivating forests; management of timber production)

SI. No.	Indicators	Core Data Requirements	Data Sources
1. Early outcome			
37	Indicators of access, use, satisfaction with forestry service: • % of rural population aware of the activities of forestry services in their area • % of communities involved in sustainable forest management • % of communities planning to expand area under sustainable forest management		Stakeholders' surveys
38	Employment in forestry-related activities (full-time equivalents)	Data on paid employment and self-employment. Time series if available	Ministry / agency responsible for forestry; National Statistics Office; special surveys
39	Value of removals of wood and non-wood forest products (selected currency)	Authorizations and licenses granted, statistics on removals, trade statistics. Time series if available	Ministry / agency responsible for forestry; special surveys
40	Value of services from forests (selected currency)	Value of carbon sequestration, tourism, water supply, etc. Time series if available	Ministry / agency responsible for forestry; Ministry of Environment; special surveys
2. Medium-term outcome			
41	Area of forest under sustainable forest management (hectares)	For example, area with forest certification, area with forest management plan, local (documented) knowledge. Time series if available	Ministry of Environment Ministry / agency responsible for forestry; certification bodies
3. Long Term Outcome			
42	**Proportion of land area covered by forest** (%)	Area of forest, land area	Ministry / agency responsible for forestry; geographical institute
43	Annual growth or % change in rural household income from forest related activities	Composition of rural household incomes	Household income surveys for rural areas
44	Growing stock per hectare (m3/ha) of forest	Area of forest, growing stock (volume). Time series if available	Ministry /agency responsible for forestry

Sl. No.	Indicators	Core Data Requirements	Data Sources
45	Rate of deforestation (%)	Information on area under forest cover, area re-forested (additions to forest stock) and deforesta-tion (deletion from forest stock) during the year.	Ministry of Environment and Forests
B5 Rural Micro and SME Finance			
1. Early outcome			
46	**% of the rural population using financial services of formal banking institutions**		Central Bank or lead commercial banks active in an area; population census; special survey
47	Indicators of access, use, satisfaction with rural finance services, e.g., • % of the rural population eligible to obtain business loan • % of users satisfied with banking services		Central Bank or lead commercial banks active in an area; special survey
48	% of bank branches that are located in rural areas		
3. Long-term Outcome			
49	% of total savings mobilized from rural areas		
50	Rate of rural credit		Central Bank or lead commercial banks or refinance institutions active in the area
B6 Agricultural Research and Extension			
1. Early outcome			
51	**Public investment in agricultural research as a % of GDP from agriculture sector**	Budget allocations to agriculture research insti-tutions; GDP for agriculture	Ministry of Finance; National Accounts Statistics

Sl. No.	Indicators	Core Data Requirements	Data Sources
52	Indicators of access, use, satisfaction with research and extension advice, e.g., • % of target farmers having knowledge of a specific technology; • advice being disseminated by extension system • % of target farmers trying the specific technology advice from extension systems on their farms • % of target farmers who were satisfied with the specific technological recommendations of the extension system and judged it beneficial, with or without adaptation		Special surveys
3. Long-term outcome			
53	% change in yields resulting from use of improved practices, for major crops of the country	Crop yield data for major crops	Current agricultural statistics or assessments based upon interviews of target farmers
54	Change in farmer income as a result of new technologies (by gender)	Average yield before and after introduction of new technology; prices of outputs; Distribution of agricultural land, area dedicated to new technology.	Special studies on improved agricultural practices.
B7 Irrigation and Drainage (services related to water use in agriculture)			
1. Early outcome			
55	**% of users who report significance increase in crop yields as a result of provision of irrigation and drainage services**		Agricultural census; other crop-related surveys; water user survey

Sl. No.	Indicators	Core Data Requirements	Data Sources
56	Indicators of access, use, satisfaction with irrigation and drainage services, e.g., • % change in proportion of target farmers with access to functioning (reliable and adequate) irrigation and drainage network • % change in the number of users		Agricultural census; other crop-related surveys or water user survey
57	Proportion of service fees collection to total cost of sustainable WUA activities and functions		Special studies on financial aspects of Water Use Association (WUA)

3. Long-term Outcome

Sl. No.	Indicators	Core Data Requirements	Data Sources
58	% change in average downstream water flows over project period during dry season		Project authorities' records
59	% change in agricultural value added created by irrigated agriculture	Area benefiting from a project, area under major crops of the command area of the project, yield of crops before and after availability of irrigation, prices of the crops sown in the command area.	Special studies
60	% of irrigation schemes that are financially self-sufficient		Ministry of Water Resources
61	% increase in cropping intensity	Area equipped for irrigation data; crop yields in irrigated area	Census of agriculture; current agricultural surveys; project related surveys

B8 Agribusiness (Agricultural Marketing, Trade and Agro-industry)

1. Early Outcome

Sl. No.	Indicators	Core Data Requirements	Data Sources
62	Indicators of access, use, satisfaction with agri-business and market services, e.g., • % of target farmers aware of market price and information services • % of target farmers using market price and information services • % of target farmers who are satisfied with agribusiness and market services		Stakeholders' surveys

Sl. No.	Indicators	Core Data Requirements	Data Sources
63	% change in number and value of activities managed by agro-enterprises		Enterprise survey.
64	Proportion or % of agro-enterprises adopting improved /certified hygiene/food management system	Number of agro-enterprises by type of business; number of certified agro-enterprises	Ministry of Industry; hygiene and food management certification bodies
2. Medium-term Outcome			
65	**% change in sales/ turnovers of target agro-enterprises**	Benchmarks and subsequent data on enterprises covering sales, cost structures, and gross and net profits	Direct data collection through special surveys including targeted enterprises and a control group of enterprises
3. Long-term Outcome			
66	% change in number of agricultural inputs outlets	Number of retail dealers for each type of inputs.	Ministry of Agriculture; companies marketing agricultural inputs
67	% increase in private sector investments in rural areas	Private capital formation in agriculture and non-agriculture sector in rural area.	National Accounts statistics; special surveys to assess private capital formation in an area
68	% increase in market share of cooperatives/ agribusiness enterprises		Ministry of Industry; special studies
C INDICATORS FOR SPECIFIC AREAS RELATED TO AGRICULTURE AND RURAL DEVELOPMENT			
C1 Community-based rural development			
1. Early outcome			
69	**% of target farmers who are members of producer organizations**		Special surveys to directly ask the households; or indirectly compiled on the basis of the membership record of community/producer organizations and demographic information
70	Indicators of access, use, satisfaction with services provided by community-based rural development organizations, e.g., • % of members of community/producer associations reporting increased production or profits as a result of membership		Special surveys to directly ask the households; or indirectly compiled on the basis of the membership record of producer organizations and demographic information. The satisfaction would need to be measured through a survey of members

Sl. No.	Indicators	Core Data Requirements	Data Sources
71	Proportion of community/producer organizations capable of meeting the production and marketing needs of their members		Stakeholders' surveys and assessments
72	Proportion of POs/NGOs with functional internal system of checks and balances		National Registry of NGO; by-laws and accounts of NGOs
73	% change in number of community associations exercising voting power in local government budget allocation		Survey of Community Associations
3. Long-term Outcome			
74	% increase in number of local enterprises in rural area		Enterprise survey, special survey
C2 Natural Resource Management			
2. Medium-term Outcome			
75	**Agricultural withdrawal as % of total fresh-water withdrawal**	Area equipped for irrigation; area under different crops under irrigated and rainfed conditions; irrigation intensity and water requirement ratios of different crops; Number of irrigations actually provided by farmers in season (on an average in an area); estimates for per capita water consumption by humans and animal; information on lift water irrigation devices (e.g. wells) etc.	National Ministry of Water Resources; special studies using crop and irrigation data from agricultural census/ surveys to estimate use of water in agriculture; per capita consumption by humans and consumption by industries
76	**Ratio of area protected to maintain biological diversity to surface area of the country**	Information on area declared as biodiversity park or reserve forest; total land area of the country	Ministry of Environment and Forests
77	**% change in soil loss from project watersheds**	Area which has become uncultivable or witnessed substantially reduced yields due to soil erosion, and total area of watershed.	Watershed project authorities

Sl. No.	Indicators	Core Data Requirements	Data Sources
3. Long-term Outcome			
78	Change in % of farm land under risk of flood/drought		Ministry of Agriculture; Ministry of Environment
C3 LAND POLICY AND ADMINISTRATION			
1. Early Outcome			
2. Medium-term Outcome			
79	% of land area inventorized		Census of Agriculture; land/cadastral register
80	Proportion of land area formally established as protected areas (%)	Information on land area of formally protected areas; total land area of the country, or project area. Time series if available	Ministry of Environment
81	**% land area for which there exists a legally recognized form of land tenure**		Agricultural census; land registration authorities
3. Long-term Outcome			
82	Share of land over which disputes exist (%)		Land/cadastral register; land dispute settlement authorities/courts
83	% of agricultural households that have legally recognized rights to land	Information on land tenure	Population census and agricultural census; special survey in project area
84	% change in number of formal land transactions		Land registration authority; land/cadastral register
85	% change in land access for women, minority groups	% of land owned or under owner-like possession by different groups including women and minority groups	Census of agriculture; land/cadastral register
C4 Policies and Institutions			
3. Long-Term Outcome			
86	Ratio of average income of the richest quintile to the poorest quintile (%) in rural areas		Household budget or income surveys

Source: Adapted from Tracking Results in ARD in Less-Than-Ideal Conditions: A Sourcebook of Indicators for Monitoring and Evaluation, Donor Platform, *FAO, World Bank 2008.*

Addressing Gender Issues through the Production and Use of Gender-Sensitive Information

Dimitri Sanga[1]

Abstract

It is widely acknowledged that gender is not only a moral issue but also, and more importantly, a development issue. Despite this recognition, insufficient progress has been made in addressing gender issues both nationally and internationally. The lack of reliable gender-sensitive information has been identified as an obstacle to the development of sound policy formulation and decisionmaking with respect to gender inequalities and the empowerment of women.

This paper presents selected measures to help address the challenges facing African countries in the production and use of gender-sensitive information to support development efforts. In doing so, it highlights various aspects of engendering statistical processes and underlines ongoing efforts by African stakeholders in this respect. It argues that data producers should strive to collect, collate, and present statistics on individuals disaggregated by sex as a minimum requirement for gender-sensitive policy formulation, decisionmaking, and monitoring and evaluation of development objectives. It calls for African countries to mainstream gender into National Statistical Systems and for better coordination at the national level, as well as with development partners in ensuring that surveys and censuses are engendered. Partnerships, networking and regular information sharing between stakeholders dealing with gender measurement issues are identified as building blocks for concerted efforts in engendering statistical processes.

Key Words: Gender statistics, Gender inequalities, Gender mainstreaming, Time-use surveys

Résumé

Il est de notoriété publique que le genre est non seulement une question morale mais aussi et de plus en plus considéré comme une question de développement. Malgré cette reconnaissance observée tant au niveaux nationaux qu'international, peu de progrès a été réalisé dans l'intégration des questions sexospécifiques

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dans les efforts de développement. Parmi les facteurs contribuant à ce manque de progrès, plusieurs parties prenantes montrent du doigt, à juste titre, le manque de données sexospécifiques.

Cet article présente quelques mesures visant à aider les pays africains à s'attaquer aux problèmes relatifs à la production et l'utilisation des statistiques sexospécifiques. Ce faisant, il fait le tour de quelques aspects relatifs à leur intégration dans le processus statistique tout en soulignant les efforts menés présentement par certains intervenants en ce sens. Il argumente que les producteurs des statistiques devraient collecter, traiter, analyser et diffuser les statistiques désagrégées par sexe comme un minimum requis pour assurer la prise de décision basée sur les résultats et le suivi et l'évaluation des objectifs du développement qui tiennent compte des questions sexospécifiques. Il fait un plaidoyer auprès des pays africains pour l'intégration des questions sexospécifiques dans leurs systèmes statistiques nationaux à travers, entre autres, une coordination des efforts tant au niveau national qu'avec les partenaires. Enfin, les partenariats, les réseaux et l'échange continu d'information sont identifiés comme éléments non négligeables pour le maintien des efforts visant à produire et utiliser les statistiques sexospécifiques.

Mots clés : *statistiques sexospécifiques, inégalités sexospécifiques, intégration des questions sexospécifiques, enquêtes sur l'emploi du temps*

1.   INTRODUCTION

During the closing decades of the last millennium, the African continent witnessed the emergence of a number of initiatives aimed at improving the social, economic, and political condition of its citizens. These included a number of national, regional, and international development plans such as the Poverty Reduction Strategies (PRSs), the New Partnership for Africa's Development (NEPAD), and the Millennium Development Goals (MDGs). These initiatives form part of what can be considered as Africa's development agenda. In the pursuit of this development agenda, it has been widely recognized that women and men face different socioeconomic realities. There is therefore a need to take into account the gender dimension in policy and decisionmaking processes and in monitoring and evaluating the progress made in the development agenda. In fact, gender equality and the empowerment of women are an integral part of the development process, as demonstrated by their inclusion in declarations, commitments and development frameworks such as the Convention on the Elimination of Discrimination Against Women (CEDAW), the Beijing

Platform for Action, the MDGs, the NEPAD and its gender component, the African Union (AU) Solemn Declaration on Gender Equality, and the Program of Action of the International Conference on Population and Development (ICPD).

There is an increasing recognition among producers and users of statistics that the ability to conduct sound policy- and decisionmaking, planning, program formulation, implementation and monitoring that is gender sensitive is dependent on data that are gender sensitive. Unfortunately, many of the African National Statistical Systems (NSSs) have made little progress in addressing gender issues in the production and use of statistics. This is due to a number of factors, including (i) the lack of capacity to deliver the needed quality and timely gender-sensitive information and (ii) a limited understanding of, and mainstreaming of, gender-related issues and concerns into statistical processes and programs. Therefore, the gender dimension constitutes an additional challenge to already weak and vulnerable African NSSs.

This paper presents selected measures aimed at improving gender mainstreaming into statistical production and processes, given the challenges facing African NSSs in their quest to improve the production and use of gender-sensitive information. The paper is organized as follows. After the introduction, Section 2 defines gender-sensitive data as opposed to sex-disaggregated ones. Section 3 elaborates on why gender-sensitive statistics are critical for development. Section 4 presents an overview of gender statistics challenges in Africa, while Section 5 examines the issue of engendering statistical production processes. Section 6 presents the African Gender and Development Index (AGDI) as a good practice in addressing the issue of gender inequalities and empowerment of women. Section 7 underlines ongoing partnerships in addressing issues confronting African NSS in gender statistics. Finally, some conclusions are drawn in Section 8, together with proposals on the way forward.

2.   WHAT ARE GENDER-SENSITIVE DATA?

Gender-sensitive data represent more than sex-disaggregated data. "Sex" refers to relatively fixed, biological differences between men and women, while "gender" refers to socially constructed differences between sexes. Unlike gender differences, which can be changed by adopting different attitudes or by any policy implementation, biological differences are by definition fixed and unchangeable. Sex-disaggregated data are those collected

and tabulated separately for women and men, whereas gender-sensitive data are those compiled and analyzed while recognizing that gender-based factors influence women's and men's different social conditions, relations, and access to resources.

In addition to providing a comparison between women and men, gender-sensitive data allow for an analysis of women's and men's participation in and contribution to all social and economic areas; they also allow measurement of the outcomes of women's and men's participation and contribution to the economy. They include data that highlight differences in roles, resources, power, norms and values, in the following areas: program monitoring, results-based monitoring, policy, program and financial accountability, responsibility, transparency, advocacy and lobbying, etc.

Gender-sensitive information on environmental sustainability, for example, should be able to assess the extent to which gender issues are being mainstreamed into programs and policies for the preservation of the environment, and improving access to safe water. Indicators should therefore look into environmental health, water and sanitation, and the impact of air and water pollution and poisonous fumes from factories on women and children's health. They could also examine the extent to which members of the local community, particularly women, participate in the planning and decisionmaking of environmental programs. They should also address the impact of environmental degradation on the availability and use of natural resources by women, and the contribution of integrating gender issues to improving water and sanitation projects.

3. WHY ARE GENDER-SENSITIVE STATISTICS CRITICAL FOR DEVELOPMENT?

Gender equality and the empowerment of women have long been considered as moral and legal issues. More recently, these issues have taken on a very different connotation, mainly in terms of economic efficiency. In fact, gender imbalances affect economic efficiency with regard to the allocation of resources as well as the enhancement of productivity for sustainable development.

There is universal recognition that gender equality and women's empowerment are necessary conditions to achieve sustainable development, as supported by evidence in several studies. Cross-country analysis conducted by Klasen (1999) suggests that if countries in the Middle East, Africa,

and South Asia had closed their gender gaps in years of schooling at a rate achieved by East Asia countries between 1962-1990, the GDP in these countries could have grown by one-half percentage point per year.[2] Udry et al. (1995) mention that the value of household output in agricultural production in Burkina Faso would benefit from an increase of 10-20% by shifting existing resources between men's and women's plots within the same household. They also note that if the government gave the same level of agricultural inputs and education to women, the yields obtained by women could increase by more than 20%.

On the other hand, efforts made by policymakers to tackle development issues usually encompass gender equality in one way or another. Baliamoune (2007) shows that higher integration in world markets and growth causes gender inequality in Sub-Saharan African countries. The findings also suggest that it is extremely important for socioeconomic policies to promote the welfare of women, in particular, by enhancing female literacy, instigating contingent trade reforms and growth-promoting policies.[3]

These examples show that women's empowerment is not simply a moral issue but also may present an opportunity for growth. To properly support development efforts, there is a need for the production of gender-sensitive data in support of sound policymaking, planning, program formulation, implementation and monitoring.

4. THE CHALLENGE OF PRODUCING GENDER STATISTICS IN AFRICA

A recent assessment of African NSSs in the framework of the Reference Regional Strategic Framework for Statistical Capacity Building in Africa (RRSF)[4] reveals that many of them are trapped in a vicious cycle, in which a shortage of funds contributes to poor performance and to low-quality statistics, which in turn creates a negative view of and hence lack of support and funding for statistical operations and development. Moreover,

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[2] Stephan Klasen, *Does Gender Inequality Reduce Growth and Development? Evidence from Cross-Country Regressions*, Policy Research Report on Gender and Development, Working Paper Series No. 7. The World Bank Development Research Group, November 1999.
[3] M. Baliamoune-Lutz, "Globalisation and Gender Inequality: Is Africa Different?", *Journal of African Economies*, vol. 16, no. 2, March 2007.
[4] AfDB, PARIS21, UNECA, and The World Bank, *The Reference Regional Strategic Framework for Statistical Capacity Building in Africa: Better Statistics for Improved Development Outcomes*, ECA Documents Publishing and Distribution Unit, Addis Ababa, October 2006.

the report revealed the fact that many national statistical plans have been designed with a special focus on the activities of the National Statistical Office (NSO); consequently, sectoral statistical production has been given less attention. As far as gender statistics are concerned, the picture is even gloomier.[5] In fact, African NSSs have made limited progress in designing systems and operations to generate gender-sensitive data needed to promote awareness of the social and economic implications of gender imbalances.

The challenges confronting African NSSs in terms of gender-sensitive data production and use include:

- Lack of a full understanding of gender-related concepts;
- Limited awareness about gender-related issues and concerns among data producers and users in NSSs;
- Lack of gender mainstreaming into statistical processes and programs;
- Inadequate advocacy for gender-sensitive statistics;
- Lack of commitment to gender statistics development by governments;
- Inadequate level of resources and a lack of continuity in resources for the production of gender statistics;
- Lack of coordination between statistical programs and national data priorities owing to competing demands;
- Lack of standard methodologies and tools for measuring and monitoring progress toward gender equality and empowerment of women;
- Inadequate short- and long-term planning for gender statistics development;
- Inadequate technical skills;
- Inadequate statistical infrastructure (sampling frames, classifications, documented concepts, definitions, and methods);
- Inadequate gender-sensitive data management (archiving, analysis, and dissemination); and
- Limited coordination and collaboration among data producers and experts on gender as well as research and training institutions.

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[5] It is worth mentioning that the lack of gender-sensitive data is not Africa specific. In this regard, the 37th session of the United Nations Statistical Commission (UNSC) in March 2006, noted that the general lack of data to address gender issues is due largely to inadequate statistical capacity, lack of gender mainstreaming in NSSs, and inadequate concepts and methods used in collecting and to some extent analyzing gender statistics. Moreover, the Commission on the Status of Women, in its 10-year review of the Beijing Platform for Action, acknowledged that "the activities for the advancement of women had been limited partly by the lack of gender statistics and data disaggregated by sex, age and in many areas, inadequate methods for assessing progress".

All these factors contribute to the paucity of gender-sensitive statistical information. There is therefore an urgent need to address these issues, which impact on sound decisionmaking and policy formulation.

5. GENDER-SENSITIVE DATA PRODUCTION AND USAGE

Given the importance of gender-sensitive, evidence-based policy decision and formulation, and the monitoring of development, a number of measures can be taken to address the challenges faced by African NSSs. These include: raising the awareness of the importance of gender in the development process; mainstreaming gender[6] into statistical production and processes, including household surveys and population and housing censuses; the use of vital and civil registration systems; and advocating for the undertaking of time-use surveys.

5.1. Advocacy

It is often assumed that producers and users of statistics are fully aware that gender-sensitive information is needed in support of their country's development efforts. However, several assessments and international fora[7] on gender statistics have revealed that many of the stakeholders involved in data production are not conversant with the concept of gender. Indeed, the term "gender" is often misunderstood and used indiscriminately as a synonym for "sex." As mentioned earlier, "gender" refers to socially constructed differences between sexes, while "sex" refers to relatively fixed biological differences between men and women. The development of gender-sensitive statistics has been slow due to a combination of factors, including: a lack of understanding of how gender is inextricably linked to broad development goals; a reluctance to change the traditional methods in which statistics have been compiled and presented; ignorance of how change can be effected; and indifference or lack of commitment to the concerns and issues of gender equality.

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[6] Gender mainstreaming was initially mentioned during the 1985 Third World Conference on Women in Nairobi. The idea has since been developed and is now widely used among the UN development community. The idea was formally featured in 1995 during the Fourth World Conference on Women in Beijing. Gender mainstreaming is the process of assessing the implications for women and men of any planned action, including legislation, policies or programs, in all areas and at all levels. It is a strategy for making women's as well as men's concerns and experiences an integral dimension of the design, implementation, monitoring and evaluation of policies and programs in all political, economic and societal spheres, so that women and men benefit equally and inequality is not perpetuated.

[7] Global Forum on Gender Statistics, Rome, Italy, December 10-12, 2007.

A better understanding of the importance of the gender concept as well as the importance of gender equality and women's empowerment as necessary conditions to achieve development, is paramount for the efficient production of gender-sensitive data. To ensure this, a wide range of initiatives and activities have been taking place at national, regional, and international levels to ensure a better understanding of gender issues in statistical production.[8]

Box 1: Gender Statistics Network (GESNET)

At the African regional level and in recognition of the importance of knowledge sharing for the development of tools aimed at addressing gender issues, UNECA has just completed the design of a Gender Statistics Network (GESNET). This is expected to provide a framework for knowledge sharing, peer learning and networking among all stakeholders dealing with gender statistics issues. Through the network, participants can advocate for sustained political commitment to integrate gender equality concerns into the policy agendas and the development of standards, frameworks and guidelines and other statistical initiatives. They can also contribute to the preparation and organization of various consultative meetings on gender measurement issues.

It is expected that the network will help to build the capacity of African countries to develop and use gender-sensitive statistics, the establishment of a permanent mechanism for promoting a dialogue among stakeholders in this area, and the improvement of gender-related analytical work in support of policymaking and program formulation, monitoring and evaluation of progress toward gender equity in poverty reduction, and other development initiatives in Africa.

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[8] Statistics Sweden, *Engendering Statistics: A Tool for Change*, 1996; FAO, *Gender Sensitive Indicators: A key tool for gender mainstreaming*, 2001.

5.2.   Gender mainstreaming in statistical production

Mainstreaming gender into statistical production is paramount if countries are to bridge the information gap and deliver the data needed to address this critical area. This approach allows for the conduct of unbiased, evidence-based policy formulation and decisionmaking. Moreover, it helps to address issues of inequalities and women's empowerment, raises consciousness of gender issues, and persuades policymakers and other stakeholders to take into account the gender dimension in decisionmaking processes.

Tools used to collect statistical information include censuses, sample surveys (households, establishments), and administrative records, including vital and civil registrations. Whichever of the latter is considered in the production of statistics, the following steps should be considered: planning and design, methodology, data collection and processing, data analysis and dissemination. Engendering statistical production means that gender issues should be taken into account at these different stages, as elaborated below.

Planning and design
The planning and design of a statistical operation are crucial to determine the different stages of the survey or census. The objective of the survey or census needs to be agreed as this will affect the remaining steps. It is also at this stage that decisions are made in terms of coverage, the target population, and the tools for the collection of the information, etc.

Engendering this stage consists in studying societal data needs. User-producers' meetings should be held to define what kind of information may be needed for a particular survey. Stakeholders should also be involved in the different steps of the survey. The various stakeholders can play an important role in advocating for data providers to respond fully to their questions; they should also be ready to articulate the benefits they expect from the survey. Women should be included at this stage, as should stakeholders who are engaged in the issue of gender equality and the empowerment of women for national development.

Samples should be drawn to represent the different constituencies of the society, including women. A labor force survey, for example, can reflect the ways in which men and women view, perform, control, and benefit from their work activities. The survey should aim to cover as many topics as possible, particularly those that are gender-sensitive. For a typical labor force survey, for example, the coverage should consider as many topics and

types of productive activities as possible, including those where women are predominantly employed. For example, work should be considered in its widest sense and coverage should include working time, job-seeking behavior, moonlighting or combined activities, casual work, subsistence activities, and informal employment etc.

Methodology

Concepts and definitions determine what is to be covered and the related details. The results of a statistical process are dependent on the definitions, concepts, and classifications used. It is therefore imperative to ensure that they reflect the actual situation of different segments of the population covered by the survey or census. For instance, they should take account of the different ways in which men and women behave, not only owing to their biological differences, but also as a result of contrasting roles, resources, power, norms and values, etc.

Furthermore, concepts and definitions should be in line with international recommendations for the topic to be covered. Employment definitions should, for example, make clear if women on extended maternity leave are to be included, as this will have an important effect on the estimates. Another example is the definition of "head of the household" which, according to some cultural norms, is invariably a man. By following international definitions and concepts, this kind of bias can be avoided.

Data collection and processing

Data collection and processing require some preliminary agreement by the survey team on the data collection instrument to be used (e.g. questionnaire), the type of questions to ask, and items to be collected. It also entails designing a set of instruments that will ensure that the questionnaire will correctly be administered, that procedures will be followed, that data will be checked for inconsistencies, etc.

The design of the questionnaire demands particular attention. The questionnaire needs to contain sufficient detail to avoid the possibility of misinterpretation by fieldworkers. The formulation of the questions can be a thorny issue, as some questions have been recognized to be biased. For example, in a labor force survey, the question should not be phrased to ask if someone is working, since work is often interpreted as "working in the formal sector". Alternatively, if someone is asked whether he or she is involved in some informal, part-time work or in-kind activity, the response would certainly be different to that elicited by the question "Do you work?"

As mentioned earlier, statisticians and fieldworkers need to be trained in understanding gender issues. There should be also a clear decision made in terms of the use of proxies while administrating the questionnaire. Beliefs, culture, and customs may influence the way a third party responds to a questionnaire on behalf of a woman. For example, in a cultural environment where women are generally and erroneously projected as "*housewives*" and men as "*breadwinners,*" asking a third party whether the woman is working may naturally lead to the answer "no." Moreover, the presence of the husband during an interview might influence the answers to a number of questions.

The choice of the unit is also important. In fact, choosing the "household" as a unit might hide a number of realities that the different segments of the population are facing. By directing questions to individuals, one can capture the information that makes a woman different from a man.

The treatment of the collected information, including imputation, influences the results of a survey. The gender perspective must always be considered in analyzing information.

Data analysis and dissemination

Prior to collecting information on a given issue, attention should be paid to exploring existing datasets, to see whether some appropriate data analysis could highlight gender issues. For example, new results may be achieved by crossing some usual tables, such as unemployment rate by sex, with marital status, number of children, educational levels, sectors etc. This has been proved to reveal substantial differences among women themselves. For example, it is well known that unemployment rates for women are generally higher than those of men in many African countries. However, among women themselves, it is more likely that women with young children are subject to even higher unemployment rates than women without children or with older children. There is therefore a need to consider relevant disaggregation by sex (a minimum), marital status, family/personal characteristics, job characteristics, and family context, etc.

Engendering surveys can be done by some re-engineering to make sure surveys include gender issues, and by using effective tools, studying the societal needs, etc. In general, what is needed is a positive outlook in developing data tabulation policy that highlights gender issues, or by looking at gender-blind data and make their effective use through appropriate data analysis.

Box 2: Engendering the Principles and Recommendations on Population and Housing Censuses

Population and housing censuses (PHC) represent one of the most important statistical infrastructures for data collection on the number and characteristics of the population of a country. They are part of an integrated system that includes other censuses (such as agriculture), surveys, registers, and administrative data. They provide the benchmark for population counting at national and subnational levels and may be the only source of information for certain social, demographic, and economic characteristics in several countries. Moreover, they can be used to construct a solid framework to develop sampling frames. Building the capacity of African countries to produce gender-sensitive data is only effective if gender aspects are mainstreamed into PHC.

To mainstream gender into PHC, the various considerations discussed for surveys also apply. At the regional level, the UNECA is undertaking a project aimed at engendering the Principles and Recommendations on Population and Housing Censuses (P&R). The expected output is the production of a Gender African Supplement to the P&R. The project consists in reviewing from a gender perspective, the statistical frameworks for the preparation of the 2010 Round of PHC and providing recommendations on how to integrate gender perspectives in census undertaking.

5.3. Time-Use Surveys (TUSs)

Economic activities can be subdivided into productive and non-productive ones. Productive activities are those associated with work, while non-productive activities mainly comprise personal activities. The general production boundary is that of activities, the performance of which can be delegated to a third person and yield the same output. According to the System of National Accounts (SNA), productive activities comprise the following:

- Activities that involve goods and services supplied or intended to be supplied to units other than their producers;

- Own-account production of goods retained by their producers (including all production and processing of primary products, whether for the market, for barter, or for own consumption);
- Own-account production of housing services by owner-occupiers; and
- Domestic and personal services produced in a household by paid domestic staff.

SNA production excludes all household activities that produce domestic or personal services for own final consumption within the same household (except for paid domestic staff). These exclusions include cleaning, servicing and repairs, preparation and servicing of meals, as well as unpaid volunteer services to other households, community, and other associations.

The concept of work is associated with the SNA activities. Only people who are engaged in SNA work are considered to be economically active, while non-SNA activities are considered as non-economic activities. According to national accounts and labor force estimations, non-SNA activities are unvalued or invisible. It is well known that, on the whole, it is women who are involved in these unvalued and invisible activities. From this evidence, it is clear that the contribution to the economy of an important portion of the population dealing with the latter kind of activities is not captured in the framework of the standard SNA.

Fortunately, statisticians have made provision for satellite accounts that help capture issues outside the SNA framework. In order to integrate unpaid work and household production in African NA, it is essential to construct national satellite accounts on household production. The first step in this process is to carry out Time-Use Surveys (TUSs). TUSs quantify how women and men, girls and boys spend their time between paid and unpaid work and leisure. They analyze activities and the time spent on each of them. As they deal with all kinds of activities that people are involved in during a given period of time, they constitute a critical instrument to evaluate the burden of unpaid work and household production, so as to inform policymaking and budgetary allocation. Once TUSs are conducted, the output is used to construct national satellite accounts to extend the SNA by integrating unpaid work and household production. This allows the capture and evaluation of the entire economy, including market and non-market components.

UNECA serves as the regional arm of the United Nations in Africa, with a mandate to support economic and social development, to foster regional integration, and promote international cooperation. Through its African

Center for Gender and Social Development (ACGS), UNECA has developed a gender-aware macroeconomic model based on the principle of General Computable Equilibrium Models. This provides detailed information at micro and macro levels using a Social Accounting Matrix emanating from the TUS and the satellite accounts on household production. In this model, gender is considered as a category of analysis in macroeconomics, so as to integrate the gender dimension into macroeconomic variables, instruments, and policies such as labor, employment, fiscal, and trade policies etc.

Despite a general consensus on the importance of TUSs, only a few African countries have undertaken one so far, namely Benin, Madagascar, Morocco, Nigeria, and South Africa. The UNECA is currently supporting the undertaking of TUSs in other African countries, including Djibouti and Ghana.

5.4. Administrative data

Administrative data are sourced from administrative records, which are compiled in the course of routine operations of government ministries and institutions. These data are usually compiled for internal (own) administrative use rather than for statistical purposes and they constitute an important source of official statistics in all countries. In many cases, these are the only sources of data. This is the case of school net enrollment data used for the monitoring of the MDGs. All African countries use administrative data from ministries in charge of education and this is the information used by the UNESCO to feed the UNSD database.

Civil and vital registration systems are an important source of administrative data, as they record the occurrence and characteristics of vital events – birth, death and causes of death, marriage, divorce, and adoption, etc. according to the laws, regulations, and legal requirements of a country. This information generally constitutes an important source of data disaggregated by sex. Combined with other sources, they can also provide gender-sensitive information. In fact, they provide vital rates such as infant mortality rate, child mortality rate, and maternal mortality rate. However, the completeness of coverage and the accuracy are prerequisites for the vital and civil registration systems information to be relevant and reliable. Unfortunately, many African countries do not have civil and vital registration systems that meet the reliability and completeness criteria; this means that information that is crucial for addressing development issues is not available.

The main issues affecting the establishment of reliable civil and vital registration systems in Africa include infrastructure, organization, and management of the registration process, capacity constraints, and lack of suitable legislative frameworks. There is therefore a need to set up reliable civil and vital registration systems in support of the production of official statistics and gender-sensitive information.

6.   THE AFRICAN GENDER AND DEVELOPMENT INDEX

To address the issue of gender inequalities and the empowerment of women (as requested in many conventions and charters signed by African countries), the UNECA has developed an effective monitoring mechanism, namely the African Gender and Development Index (AGDI).[9] This index is expected to support policymakers in the assessment of their own performance and in the implementation of gender-balanced policies and programs.

The AGDI is a composite index that combines the Gender Status Index (GSI), which measures relative gender inequalities based on readily available quantitative indicators, and the African Women's Progress Scoreboard (AWPS), a set of qualitative measures of progress in women's empowerment and advancement. It incorporates major international and African charters, conventions, and documents dealing with gender issues (see Annex 2).

The GSI is made up of three blocks, namely social power, economic power, and political power. Each block consists of various components, subcomponents, and indicators/variables, as depicted in Annex 1 at the end of this paper. Equal weight is given to components, subcomponents, and indicators. Each indicator is calculated as the proportion of female achievement to male achievement for the given variable.

The AWPS captures qualitative issues in relation to the performance of gender policies of African governments and by taking into account all major international and African conventions and charters that address women's concerns. It measures progress made by African countries in ratifying relevant conventions such as the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) and the African

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[9]   Details on the AGDI can be found in The African Gender Development Index, UNECA Document Reproduction and Distribution Unit, Addis Ababa, Ethiopia, 2004.

Charter on Human and People's Rights (ACHPR), and in implementing policies, in line with international documents, on such issues as violence against women, maternal mortality, contraception, HIV/AIDS, women's land rights, women's right to equal wages and access to new technologies and agricultural extension services.

The AWPS uses a simple three-point scoring system from 0 – 1 – 2. The AWPS also uses the same weights for all variables. It is measured in percentages set to a possible maximum score, in which each row is seen to have a possible maximum score of 100%. The total score of the AWPS is similarly computed from the total of all 13 rows, which again is set at 100%. The scoring is done on a three-point scale with 0 indicating a zero performance on the measures on the horizontal axis, 1 a poor to fair performance, and 2 a good to excellent performance (see Annex 2).

The AGDI has a number of strengths and weaknesses. The *strengths* include the following:

- It comprises a combination of quantitative and qualitative measures;
- It allows measurement of issues that so far are not taken into account in internationally comparative indices, such as time use and ownership of rural/urban plots/houses or land;
- It is based on nationally available data, unlike other indices that rely on internationally maintained databases;
- It measures issues of particular relevance to the African context;
- It uses African policy documents such as the Protocol to the African Charter on Human and People's Rights on the Rights of Women in Africa and the Abuja Declaration on HIV/AIDS;
- It is very easy to generate and use.

On the other hand, the AGDI also has some *weaknesses*, including:

- The limitation to measuring the gender gap, irrespective of the general socioeconomic performance of a country;
- The inability to capture issues such as identity and personal choice;
- The focus on gender equality and the status of women without any reference to other intersecting factors such as race, ethnicity, the rural/urban gap and age.

Twelve African countries have completed the AGDI process so far, including Benin, Burkina Faso, Cameroon, Egypt, Ethiopia, Ghana, Madagascar, Mozambique, South Africa, Tanzania, Tunisia, and Uganda. It is

expected that the tool will be implemented in additional countries, namely Botswana, Cape Verde, Gambia, Namibia, and Senegal.

7.   PARTNERSHIPS

In line with the actions recommended by the Beijing Platform for Action, the international community has set up a series of fora on gender statistics. These are expected to enhance countries' capacity to collect, use, and disseminate indicators assessing the status of women in society. Furthermore they will provide a platform for international dialogue on how to improve indicators, and support more effective policies on gender.

The Global Forum, as well as the Inter Agency and Expert Group (IAEG) on Gender Statistics, were established in December 2006 to meet a growing demand for quality gender statistics and to create synergies among existing initiatives around the world. The Global Forum on Gender Statistics took place in Rome, Italy on December 10-12, 2007, followed by the establishment of the IAEG on Gender Statistics. The Rome Forum focused on the exchange of best practices on data collection through different sources such as censuses, household surveys, and administrative records. It also witnessed the launch of GenderInfo, the most comprehensive database on gender available to the public. Moreover, it dealt with issues related to violence against women, since this has proven to be a difficult endeavor, although high emphasis has been given to this topic by many countries around the globe.

The IAEG on Gender Statistics has been established to serve as a permanent space to disseminate best practices on data collection and on how to translate this information into sound policymaking. It is also intended to align partners working on gender statistics, review the latest technical and methodological developments on the subject, and serve as a platform to maintain GenderInfo. As such, it will also serve as a permanent mechanism to improve global coherence on gender statistics; promote methodological developments; build technical capacity; and improve access to data and other materials related to this subject. The IAEG will focus on those research areas related to violence against women, informal work, time-use, and poverty. This group will also contribute to the production of teaching materials to conduct training workshops at regional and country levels.

At the African regional level, stakeholders have set up a Working Group within the framework of the Statistical Commission for Africa (STATCOM-

Africa) during the first meeting of this apex body. The Working Group is expected to develop a regional program on gender statistics that will serve as the framework for intervention in African countries. In addition, during the high-level dialogue on gender statistics held in Kampala, Uganda from June 9-10, 2008, participants adopted the formation of the Kampala City Group on Gender Statistics.

8.   CONCLUSIONS

It is now globally acknowledged that gender is not only a moral issue but also, and more importantly, a development issue. Despite this recognition, little progress has been made in addressing gender issues. One of the principal reasons for this is the lack of information on gender issues, not only sex-disaggregated data but also gender statistics as defined previously. This information is badly needed in support of sound policymaking and program formulation, monitoring, and evaluation.

As a way forward and in order to reinforce ongoing efforts, a number of guiding principles should be adopted. Data producers should strive to collect, collate, and present statistics on individuals disaggregated by sex. This is a minimum that is required to undertake gender-sensitive decision-making and policy formulation, as well as monitoring and evaluation of development objectives. African countries should mainstream gender into NSSs, to ensure that gender issues are better understood and taken into account at every step of the statistical process. Moreover, there is need for enhanced coordination at the national level as well as with development partners, to ensure that surveys and censuses are engendered. As populations and housing censuses are one of the most important statistical activities undertaken by countries, there is a pressing need to building the capacity of African countries to produce gender-sensitive data and to mainstream these into the PHC.

There is also a need for increased networking and regular information sharing between stakeholders dealing with gender measurement issues. In this regard, GESNET is a commendable initiative which should be promoted. Countries should also review available data and information to identify where the gender data gaps are. In doing so, particular attention should be devoted to using the available data to generate and improve gender statistics production before exploring the possibility of collecting additional information on gender statistics.

NSOs need to consider where they are now, in relation to engendering statistics; also where they want to be, how to get there, what it will take, and what they need to prioritize. They should consider the staff levels to dedicate to gender statistics, coordination mechanisms with users and other producers of statistics, and encourage gender budgeting in all sectors. Sectors will have to be technically supported to engender their statistics. It is also critical that advocacy for engendering statistics is carried out both in NSOs and in the entire NSSs. Prototype modules for capacity building have been developed by several organizations, including the UNSD and the World Bank. The material can be accessed through their respective websites.

Finally, the setting up of the Global Forum, the IAEG, the STATCOM-Africa Working Group on Gender Statistics, and the Kampala City Group on Gender Statistics will certainly help to move the agenda forward. They provide fora where partners and countries can exchange their respective experiences on data collection and on how to best translate this information into sound policymaking and program formulation. African countries and organizations should participate fully and effectively in these fora to ensure the sustainability of ongoing efforts.

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ANNEX 1: THE AGDI – THE GENDER STATUS INDEX

Block	Component	Subcomponent	Indicator
Social power "capabilities"	Education	Enrollment rate	Primary enrollment rate
			Secondary enrollment rate
			Tertiary enrollment rate
		Dropout	Primary dropout ratio
			Secondary dropout ratio
		Literacy	Ability to read and write
			Primary school completed
	Health	Child health	Stunting under 3
			Underweight under 3
			Mortality under 5
		Life expectancy at birth	
		New HIV infection	
		Time spent out of work	
Economic power "opportunities"	Income	Wages	Wages in agriculture
			Wages in civil service
			Wages in formal sector (public and private)
			Wages in informal sector
		Income	Income from informal enterprise
			Income from small agricultural household enterprise
			Income from remittances and inter-household transfers
	Time use or employment	Time use	Time spent in market economic activities (paid employee, own-account or employer)
			Time spent in non-market economic activities or as unpaid family worker in market economic activities
			Time spent in domestic care and volunteer activities
		Employment	Share of paid employees, own-account workers and employers in total employment

/cont…

ANNEX 1: THE GENDER STATUS INDEX (cont.)

Block	Component	Subcomponent	Indicator
Economic power "opportunities"	Access to resources	Means of production	Ownership of rural/urban plots/houses or land
			Access to credit
			Freedom to dispose of own income
		Management	Employers
			High civil servant (class A)
			Members of professional syndicates
			Administrative, scientific, and technical
Political power "agency"	Public sector	Members of parliament	
		Cabinet ministers	
		Higher court judges	
		Members of local councils	
		Higher positions in civil service	
	Civil society	Senior positions in	Political parties
			Trade unions
			Employers' associations
			Professional syndicates
		Heads or managers of NGOs	
		Heads of community-based associations or unions	

ANNEX 2: THE AGDI – THE AFRICAN WOMEN'S PROGRESS SCOREBOARD (AWPS)

			Ratification	Reporting	Law	Policy commitment	Development of a plan	Targets	Institutional mechanism	Budget	Human resources	Research	Involvement of civil society	Information and dissemination	Monitoring and evaluation	Total	%
WOMEN'S RIGHTS	CEDAW	Ratification without reservation															
		Optional protocol															
		Art 2															
		Art 16															
	African Charter of Human and People's Rights-Women's Rights Protocol- Harmful Practices																
SOCIAL	Beijing Platform for Action																
	Violence against women	Domestic violence															
		Rape															
		Sexual harassment															
		Traffic in women															
	African Charter on the rights of the Child art XXVII																
	Health ICPD POA Plus five	STI's															
		HIV/AIDS															
		Maternal mortality															
		Contraception															
	2001 Abuja Declaration on HIV/AIDS and women																
	Education	Policy on girl school dropout															
		Education on human/women's rights															

/cont…

ANNEX 2: THE AFRICAN WOMEN'S PROGRESS SCOREBOARD (cont.)

			Ratification	Reporting	Law	Policy commitment	Development of a plan	Targets	Institutional mechanism	Budget	Human resources	Research	Involvement of civil society	Information and dissemination	Monitoring and evaluation	Total	%
ECONOMIC	ILO	Convention 100															
		Convention 111															
		Convention 183															
		Policy on HIV/ AIDS															
		Engendering NPRS															
		Access to agricultural extension services															
		Access to technology															
		Equal access to land															
POLITICAL	UN 1325 conflict resolution																
	Beijing PFA effective and accessible national machinery																
	Policies	Support to women's quota and affirmative action															
		Decisionmaking positions within parliaments/ministries															
		Gender mainstreaming in all depts															

Training Young Statisticians for the Development of Statistics in Africa

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Abstract

National development is inextricably linked to statistical development, although few African governments realize this reality. Statistics and statisticians play a major role in the development of all countries and in the advancement of science. While technical statistical knowledge is a prerequisite for all statisticians, effective management skills are also needed by those entering the private sector and government. However, the challenge is that current training programs in Africa require a major overhaul for statisticians to acquire these competencies and skills. In this paper, we propose a new approach to training future statisticians for the development of statistics in Africa. We offer suggestions on how to structure statistics training programs in Africa – mostly at the university level (pre-employment) and at the workplace (on-the-job training or learning). We advocate for the creation of SPAPGA (Statistics Partnership among Academia, Private Sector and Government in Africa) to advance collaboration between the private sector, government, and academia to improve statistical training and capacity building in Africa. We also call for extensive curriculum reform to include mentoring and internships as part of the regular training of young statisticians.

Key words: *Internship, Co-op program, Mentorship, Mentoring, Statistics training, SPAPGA*

Résumé

Le développement national est inextricablement lié au développement statistique, bien que peu de gouvernements africains soient conscients de cette réalité. La statistique et les statisticiens jouent un rôle prépondérant dans le développement de tous les pays et dans le progrès scientifique. Si la connaissance des techniques statistiques est nécessaire pour tous les statisticiens, des qualifications en

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matière de gestion efficace s'imposent également à ceux d'entre eux qui entrent tant dans le secteur privé que dans l'administration publique. Cependant, le défi persiste que les programmes de formation des statisticiens africains en cours nécessitent une révision profonde pour que ceux-ci acquièrent ces compétences et qualifications. Dans cet article, nous proposons une nouvelle approche pour la formation des futurs statisticiens, en vue du développement de la statistique en Afrique. Nous faisons des suggestions quant à la manière de concevoir les programmes de formation statistiques en Afrique - qui concernent pour la plupart les statisticiens en formation dans les universités (pré-emploi) mais aussi les professionnels du monde du travail (formation continue). Nous préconisons la création du SPAPGA (Partenariat statistique entre le milieu universitaire, le secteur privé et le secteur public) en vue d'améliorer la collaboration entre le secteur privé, les structures gouvernementales et le milieu universitaire afin de rehausser le niveau de la formation statistique et ainsi développer les capacités statistiques en Afrique. Nous proposons également la réforme profonde des programmes d'études afin d'inclure la pratique du parrainage et des stages dans le cursus régulier de formation des jeunes statisticiens.

Mots clés : *Stages de formation, programmes coopératifs, parrainage, formation statistique, SPAPGA*

1.   INTRODUCTION

What are the skills and competencies needed by statisticians to advance the development agenda in Africa? This is a question that many authors have attempted to address (Ching'anda 1998; Tulya-Muhika 1990; Woodward 1995). One thing that is clearly needed is rigorous training of statisticians at all levels of the education system: primary, secondary, high school and university. It is often said that "the more prosperous a country is, the better are its statistics" (Rao 1989). National development is inextricably linked to statistical development, although few African governments realize this fact. Statistics and statisticians play a major role in the development of all countries and in the advancement of science. Statistics is a field that cuts across disciplines because it is the means by which data are collected, analyzed, and interpreted to inform policymaking decisions at all levels of government.

Several authors have provided ideas on how to train statisticians for different roles: for working in general industry (Boardman et al. 1980; Hoerl 1993; Kettenring 1995; Marquardt 1979; Porter 1993), government (Bishop 1964; Moore 1991; Moses 1982; Ross 1995), pharmaceutical

firms (Chuang-Stein 1996; DeMets et al. 1994; Hammond 1980; Liss 2003; Newell 1984; Senn 2000), and academia (Bickel 1995; Bailar 1994). Overall, there is some consensus about what the basic skills should be (Bryce 2001; Federer 1978; Hogg 1991; Iman 1995; Kanji et al. 1981; Ritter et al. 2001; Tobi et al. 2001; Watts 1970). The goal is to make statisticians more proficient in applying statistical techniques, but also to be good communicators of statistical information.

In Africa, the Central Statistics Office (CSO), or Bureau of Statistics (BOS) as they are referred to in other countries, is charged with collecting, analyzing, and disseminating national statistics to help governments to create national development programs. This is a mandate that the CSOs have adopted since the early 1940s (Tulya-Muhika 1990). The success of the CSOs is dependent on successful training programs that address the needs of African countries. In 1978, the Statistical Training Program for Africa (STPA) was created to increase the supply of statisticians in Africa by 1990 (Ching'anda 1998). While this effort has managed to increase the numbers somewhat, achievement of the intended goals is still far off (Tulya-Muhika 1990). In addition, some African countries have been ravaged by war, famine, and the spread of the HIV-AIDS pandemic. The latter has created a new challenge for Sub-Saharan countries and threatens their future development. Statisticians are among the key players in the efforts to fight the epidemic. We have reached a critical time when "statisticians [should] work alongside policy-makers in decision-making if the country is to get full benefits of the available statistical knowledge and skills" (Rao 1989). This view is echoed by Tulya-Muhika (1990), who writes that:

> "the statistician of the future will have to be a multi-faceted, knowledgeable, public relations officer. He (or she) will need the capacity to do statistical work; be knowledgeable in data processing and conversant with development issues; be able to work with policy-makers, data processors, and other groups… form an effective bridgehead between statistical information and users of statistics, including the general public."

Annex 1 provides a comparative summary of the required skills for statisticians working in industry, academia, and government. While technical statistical knowledge is needed by all, effective management skills are also needed by those going into industry and government. However, the problem is that current training programs for African statisticians would need a major overhaul for them to acquire these competencies and skills.

2.   CHALLENGES, OBJECTIVES, AND METHODS

2.1   Challenges for statisticians

Statisticians, and particularly young statisticians working in Africa, face a multitude of challenges at different levels, including:

- Limited opportunities for career development. In most Africa countries, statistics is perceived to be driven and required by governments, akin to a by-product;
- Lack of appreciation of the power of information by governments, leading to poor funding, incentives and motivation arrangements for statisticians;
- Professional "pressure" – the field is not lucrative enough compared to other professions;
- Lack of learning materials based on the specific African experience and practices;
- Adaptation of foreign practices to local conditions, leading to poorly sustained capacity;
- Lack of adequate in-service training programs;
- Poorly informed society – inadequate statistical literacy;
- Poor ICT policy (education, curriculum, etc.);
- Lack of a professional ethics code;
- Lack of regulatory bodies on statistical practices (i.e. a code of conduct);
- Poor on-the-job training, including the lack of mentorship programs; and
- Poor administrative structures (administrative boundaries, mobile population, fluid economies, governance, etc.).

Statistical development in the African context requires that we address these challenges at all levels if statisticians are to meet the needs of their individual countries.

2.2   Objectives of the paper

The objectives of this paper are: (i) to briefly review the current approaches for training statisticians in Africa; and (ii) to propose a new approach. Our suggestions cover the training of statisticians mostly at the university level (pre-employment) and at the workplace (on-the-job training or learning).

2.3   Methods

We used the Internet as the primary source of information and reviewed statistics programs in African institutions of higher learning in order to answer the following key questions:

- How many universities are there in Africa?
- How many are on the web?
- Of those on the web, how many have statistics programs?
- Of those on the web and with stats programs, how many have co-op or internship programs?

We discuss ways in which academia, industry, and governments can work together to enhance statistical training in Africa.

3.   RESULTS

3.1   Results of the review

There are 53 countries in Africa, including the islands of Madagascar, Comoros, Seychelles, Cape Verde, and São Tomé and Principe. Of these, our Internet search found 50 countries with a total of 826 universities or post-secondary instructions. There are 249 universities with a web address, of which 97 have a statistics or related program (see Annex 2). Of the 97 universities with a web address, we found four universities in four separate countries with co-op or internship statistics programs:

1. University of Nairobi – School of Mathematics (Kenya)
2. University of Ilorin – Department of Statistics (Nigeria)
3. University of KwaZulu-Natal – Faculty of Science and Agriculture (Republic of South Africa)
4. University of Zimbabwe – Department of Statistics (Zimbabwe).

Annex 3 provides the relevant statistics programs for the four universities along with the web addresses. Based on these results, there is sufficient evidence to suggest that the prevalence of statistics co-op or internship programs in African universities is very low. This provides, in part, the basis of the proposal that we make below regarding the training of statisticians in Africa.

3.2 Suggestions on the training of statisticians

In this section we present suggestions on how to address the training of statisticians at the pre-employment stage, i.e. at the university or college training.

Initiating a dialogue on how to design optimal curricula
In his call for curricula reform for the training of statisticians in Africa, Tulya-Muhika (1990) recommended that

> "curricula reform should move towards introduction of some additional teaching in (a) data processing; (b) development studies; (c) economics; (d) politics; (e) sociology; and (f) industrial and other scientific applications, all in the African context, for all would be professional statisticians in Africa."

The key point here is contextual training of African statisticians. This requires closer collaboration between employers (government and industry) and educators at all levels of statistical training to ensure that the curricula address the evolving needs of African countries. We recommend developing a strategic partnership similar to the Statistics Partnership among Academe, Industry and Government (SPAIG), created in 1994 to foster collaboration between the parties (see SPAIG website). SPAIG has been described as a win-win partnership, providing opportunities to all parties (Peck et al. 1998). Chief among its achievements are:

- Enhancing the practical use of statistics;
- Increasing the utility or value of statistics to society;
- Improving the educational experience for students;
- Enhancing student career decisionmaking processes and outcomes;
- Improving communications among statisticians;
- Fostering greater awareness of partners' needs, issues and concerns;
- Boosting the self-image of statisticians;
- Making statistics a more rewarding profession; and
- Ensuring that statistics continues to grow as a field.

The role of the proposed SPAPGA (Statistics Partnership among Academe, Private Sector and Government in Africa) is to foster collaboration among the parties, and to facilitate discussions through annual trilateral meetings and regular seminars. These would include discussions about curricula development that would meet the ever-changing needs of African countries.

It is important to note that most African countries are non-industrialized, but have a private sector that includes industry.

We already have some good examples where governments and training centers have come together to enhance training practices for young statisticians. These include the Institute of Statistics and Applied Economics (ISAE) – Makerere University in Uganda and The Eastern Africa Statistical Training Centre (EASTC) in Dar es Salaam, Tanzania. In both cases, not only are the Boards of these Centers staffed by policymakers in government, but also with heads of National Statistics Offices who actually make recommendations on curriculum development. In addition, the staff of the training centers participate in statistical activities in government. Also some staff of NSOs teach practically oriented courses at these centers.

Incorporating experiential learning in the curriculum

Internship and co-op academic programs (which we define later) have been widely used in different disciplines, including medicine (Baker 1999), sociology (Danzger 1988; Dodson 1951; Kelly 1986; Neapolitan 1992; Satariano 1979), law (Stone 1999), engineering (Hilburn 1997), nursing (Owens et al. 2001), education (Corcoran 1988), business (Johnston et al. 1986), and statistics (Darch 1995). Again, the success of such programs depends in part on the cooperation between academic programs and governments and industry. There is sufficient evidence in the literature to indicate that internship programs enhance students' learning and careers (Brooks et al. 1995; Gault et al. 2000; Inzelt 2004; Thompson 1950). One of the roles for SPAPGA would be to facilitate co-op or internship programs.

Internship and co-op training provide several benefits to students, universities, and employers (see Annex 4). Overall, these provide an excellent, valuable pre-employment experience for students, enhance communication skills with non-statisticians (statistics users), and improve practical problem-solving skills and computer literacy (practical statistical software training for data management and processing; working with large databases). As the old Chinese proverb says, "Tell me, I'll forget. Show me, I'll remember. Involve me, I'll understand." In essence, this emphasizes the importance of practically experiencing the learning as a way to enhance awareness, understanding and application of concepts.

Introduction of a mentoring component in statistics training

Professional statisticians often work in multidisciplinary teams. Effective statistical collaboration in a multidisciplinary environment requires skills

not covered in the usual statistics courses. Graduates often learn such skills through trial-and-error. Scientists have long advocated the use of mentoring as a way to facilitate the acquisition of important career skills (Alberts 1999; Garfield 1992; Hoover 2005; Thabane et al. 2006). Mentoring, from the Greek word "*mentur*", which means enduring (Consumer Guide 1993), is defined as a sustained relationship between a youth and an adult. Thabane et al. (2006) further define mentoring as "a relationship between a mentee (usually a young person) and a mentor (usually a caring and more experienced adult) whose primary purpose is to help the mentee to define individual career and life goals and find ways to achieve them."

We recommend designing training programs that include formal mentorship of students beyond the usual supervision of students, which aim at helping students attain the academic goals of thesis write-ups. Thabane et al. (2008) used this principle to develop a course on biostatistical collaboration in health research, which aims to close the gap between classroom instruction on biostatistical techniques and the application of the techniques in real-life collaborations. The course combines classroom discussions, mentoring and internship to advance both the technical and non-technical statistical skills necessary for biostatisticians to be effective in health research collaborations. We recommend extending this model to training statisticians for all applications of statistics, including government and private sector or industry. Students receive valuable pre-employment guidance on how to plan their career from the mentor.

Training on important survival skills
Introduction of training programs that provide opportunities to enhance other non-statistical skills is equally important. Examples include offering workshops or courses on stress management, time management, team work/dynamics, conflict resolution, financial management, and leadership skills. Many of these skills have been identified as essential for practicing statisticians (Bryce 2001; Federer 1978; Hogg 1991; Iman 1995; Kanji et al. 1981; Ritter et al. 2001; Tobi et al. 2001; Watts 1970), yet they are not part of most regular training programs. These often prove to be the most useful skills for students joining the workforce, and for subsequent career development (see Annex 1).

Internship and co-op statistics programs
Consideration should be paid to introduce internship and co-op statistics programs that provide students with the opportunity to gain some work experience prior to finishing their study. These will equip them with the technical and non-technical skills they will require when they take up full-

time jobs. The term "co-op" and "internship" may be defined differently in various programs, but in general:

- *Co-op* usually refers to a multi-work term agreement with one employer; traditionally with at least three work terms alternated with school terms, resulting in a 5-year degree program. Co-ops are full-time, paid positions.
- *Internship* usually refers to a one-term work assignment, most often in the summer, but not always. Internships can be full- or part-time, paid or unpaid, depending on the employer and the career field.

(Definitions 2006)

Providing opportunities for students to interact with other students
We propose the creation of statistics student societies, whose role would be to enhance cross-fertilization of ideas among students and to exchange experiences.

Providing opportunities for students to be involved in publication of their work
Writing and editorial skills are important learning competencies that every student should possess. Introducing a student-centered Journal of Statistics is one way for students to participate in the peer-review process to advance science. This also provides them with ample opportunity to improve their writing and editorial skills – skills that are often in great demand in the workplace.

Increased funding from governments to enhance statistical training
Statistical offices in Africa face severe funding problems, and largely depend on the generosity of development partners. Many governments fund only the recurrent budget and only a minimal portion goes to development and capital expenditure. Even what goes to the recurrent budget is too small to provide incentives and motivate statisticians. The budget needs to be increased in line with the development policies that require statistics and information for the implementation of the national development agenda. Recently there have been talks to integrate the statistical development strategies within the development frameworks such as Poverty Reduction Strategies (PRSs) or Medium-Term Expenditure Framework (MTEF) budget process to ensure adequate funding for statistics, and to boost the effectiveness of statistical technical assistance (Kibuka 2007).

3.3   Career development initiatives

On-the-job learning

Wood and McQuarrie (1999) define on-the-job learning (also known as "job-embedded learning") as "learning by doing, reflecting on the experience, and then generating and sharing new insights and learning with oneself and others". Those participating, while simultaneously performing their duties, learn by doing, reflecting on specific work experiences to uncover new understanding, and listening to colleagues share best practices. On-the-job learning can be through formal or informal interaction.

On-the-job learning does not require participants to set aside a separate time to learn, as it occurs while they are actively performing their job-related tasks. In this way, time efficiency and cost are maximized, and this also promotes immediate application of what is learned. Examples of on-the-job learning include study groups, reflective logs, action research, peer-coaching and mentoring. This paper will focus on the latter, mentoring. The reason for our choice is that on-the-job mentoring has been widely applied in many areas such as medicine, nursing, and surgery (Thabane et al. 2006).

On-the-job mentoring for young statisticians

There are two main types of on-the-job mentoring, namely, natural mentoring and planned mentoring. Natural mentoring may occur through an established friendship, collegiality, teaching, coaching, etc., while planned mentoring is through established and structured programs in which mentors and mentees are selected and matched. We advocate for the establishment of structured mentoring programs to help young statisticians joining the workforce to acquire important survival skills. Thabane et al. (2006) suggest ways in which this mentoring relationship can be formulated for the benefit of both mentee and mentor. As part of its role, the proposed SPAPGA can be charged with: (i) providing support to help agencies develop structured internal mentoring programs, and (ii) organizing mentoring workshops to train potential mentors to gain basic mentoring skills, including providing support with continuing education efforts.

Assisting young statisticians on their career path

There is a general consensus that statistics (and evidenced-based decision-making) is important to the development of a society, and to a nation for that matter. Capacity building, through the development of statistical processes and skills that respond to policy and development questions, are critical now and will become more so in the future. There is a need

to further develop the management of statistical systems, and for serious curriculum reform that includes mentoring elements in statistical training, as noted earlier. The development of statistics largely depends on the type of training and mentoring arrangements in place. Acquisition of management skills can help to direct and supervise an institution, such as a statistical agency, more effectively. Mentoring programs, which go beyond graduate education, have a role to play in the process, including the capacity to identify mentors and mentees.

Other ways to assist young statisticians include: in-service programs, affiliation with statistical societies, and exchange programs, as detailed below.

In-service programs

These skills-enhancing programs are predominantly implemented while in employment. In-service programs are intended to help employees develop their skills in a specific discipline or occupation. They are mostly conducted during a break in the individual work schedule. Such programs assist young statisticians to improve their performance and keep up to date with technological advances. They boost life chances by improving qualifications, employability, efficiency and productivity – thereby providing a sense of career direction.

Affiliation with statistical societies

Statistical societies or associations of statisticians in Africa are few in number. Where they do exist, not many statisticians are affiliated. Some of the objectives of a statistical society are to support and foster the ideals of the profession, to provide guidance on practices, and to act as a resource for sharing experiences. The statistical society also acts as a source of mediation among its members, and to protect the reputation of its members, including occasions when a legitimate professional finding comes under attack.

Statistical societies in Africa are vulnerable – they have no power or local professional support systems, especially when their practices are subject to political interference. In such a situation, statisticians have little or no recourse to seek professional redress, thereby rendering the UN Fundamental Principles of Official Statistics redundant. There is therefore a pressing need for statisticians and indeed statistical agencies to consider setting up statistical associations in African countries. Statisticians and other related professions such as economists should be encouraged to take up membership. The country associations must be affiliated with a regional body and subsequently with an international body.

Statisticians must also have access to the International Statistical Institute (ISI) Ethics Professional Declaration (ISI 1985), not only to provide support, but also to understand and appreciate the ethics and conduct of statistical practices.

Affiliation with a statistical society encourages the sharing of knowledge and keeping abreast of new developments and techniques.

Exchange programs
Within a country: Introducing inter-agency or inter-departmental seminars, including working in different divisions of a statistical agency, can provide opportunities for cross-fertilization of ideas and models between divisions, agencies, and departments. This allows participants to learn about the types of issues or problems that they may be presented with. It also provides opportunities to network and obtain a mentor, depending on the career goals.

Across borders: South-south cooperation through study visits or an exchange of staff for an agreed period of time not only improves the skills of statisticians, but allows for the sharing of common best practices among agencies. This helps to broaden both the scope and the knowledge of young statisticians.

4.   THE WAY FORWARD

Overall, our review shows that almost all African countries have at least one university. However, not all of them have statistics programs, let alone a web linkage. Of those with a web linkage, four have statistics programs with co-op or internship as an integral element of the training. This situation is not unique to African universities or statistics programs in general. However, we propose the creation of a model for training statisticians which embraces integration of in-class instruction with experiential learning through internships or co-op placements either in industry or government. This will require all parties – government, industry, and academia – to work closely together to design appropriate curricula.

Following the lead of SPAIG (Peck et al. 1998; SPAIG website), we advocate for the creation of SPAPGA, a consortium between universities, the private sectors and governments in Africa, whose role would be to oversee and enhance collaboration between the parties. The goal is to enhance the quality and quantity of statistical training in Africa. It is crucial for

SPAPGA to formulate a clear process to facilitate this goal, including the creation of indicators of success to monitor progress.

Our proposal includes the use of mentoring to be incorporated within university and on-the-job training programs. Mentoring can greatly improve the learning process for students and mentees. It is also recognized as an important ingredient for the future of science and human development (Alberts 1999; Garfield 1992; Thabane et al. 2006). Partly motivated by the SPAIG partnering model (SPAIG website), Figure 1 below provides a summary of our vision of the proposed training model for statisticians in Africa.

5.   SOME CONCLUDING REMARKS

It is generally claimed that "the more prosperous a country is, the better are its statistics" (Rao 1989). We venture to add that "the better the statistics of a country, the more prosperous it becomes". The future and betterment of statistics in African countries depend on the well-envisioned training of young statisticians. We challenge all stakeholders – educators, governments and private sector partners – to take part in the discussion to improve statistics education programs at all levels, and to endeavor to make the statistics training contextual to address the growing demands of qualified statisticians to lead evidence-based development planning. Experiential learning is the key to successful training for future statistical leadership. An African proverb states "if you want to go fast, go alone; if you want to go far, go together." We believe that working together, in partnership with all stakeholders, can go far to advance the training of statisticians for the betterment of development in Africa. Enhanced cooperation between academic programs, governments, and private sector can bridge the gap between classroom instruction and the workplace where statistics is applied.

Figure 1: Proposed Training Model for the Development of Statistics in Africa

SPAPGA (Statistics Partnerships among Academia, Private Sector, and Government in Africa)
- foster collaborations between partners
- facilitate regular annual meetings and seminars
- foster discussions on curricula development

Students/research findings   Students/research findings

Government   Academia   Private sector

Money/research problems   Money/research problems

Preemployment training
- inclass instruction: statistical concepts
- experiential learning, coop, internship, apprenticeship
- non-statisical skills: time/stress management, team dynamics
- interdepartmental seminars
- student-centered research meetings, seminars
- student-centered pre-reviewed publications
- mentorship

On-the-job training
- mentorship
- reflective logs
- peer coaching
- in-service programs (e.g. discipline programs)
- affiliation with statistical societies
- inter-departmental/agency seminars
- inter-country exchange programs
- study groups
- action research

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ANNEX 1: SKILLS REQUIRED FOR STATISTICIANS WORKING IN DIFFERENT AREAS

Area	Pharmaceutical	Industry	Academia	Government
General skills	1. *Social skill:* involving all aspects of the working environment (i.e. administration) 2. *Interpersonal skill:* to listen, communicate, propose, negotiate and persuade 3. *Interdisciplinary skill:* to learn and understand a variety of disciplines 4. *Writing skill:* to write reports in a plain language with minimum statistical complication 5. *Presentation skill:* to summarize data, display graphics, and present results in an effective and clear fashion 6. *Statistical methodology:* solid statistical thinking and ability to develop new methodology 7. *Good mathematical foundation and computational skill*			
Non-statistical skills	• knowledge of clinical/some medical issues • ability to plan and develop research protocols • understanding of drug regulations • consulting	• knowledge of economic and technical aspects of the companies • understanding of policies • own unique perspective • organizational effectiveness • ability to develop partners and alliances	• teaching skill • faculty/scholar philosophy • ability to develop and define own area of interest • collaboration • ability to maintain a good balance between theory and practice	• knowledge of privacy issues and legal requirements • understanding of policies • greater emphasis on communication • ability to grasp a broader view of statistics • consulting
Statistical skills	• formulation, stability and pre-clinical toxicology testing • bio-equivalence study, post-marketing surveillance • design, safety and efficacy of clinical trials • categorical data analysis, survival analysis • Bayesian statistics • medical/statistical literature research • use of statistical packages	• statistical quality/process control, reliability analysis • experimental design, analysis of data • analysis of variance (ANOVA/MANOVA) • modelling building (stochastic or non-stochastic) • time series, forecasting • multivariate analysis • statistical literature research • SAS programming, use of statistical packages	• strong mathematical statistics • probability theory • regression analysis • design of experiments • nonlinear/non-parametric estimation • contingency tables • numerical analysis • computer intensive methods	• survey sampling • bootstrapping • demographical analysis • multivariate analysis • analysis of historical data, estimate of trends in output • use of statistical packages

ANNEX 2: AFRICAN UNIVERSITIES WITH A STATISTICS PROGRAM

Country	No. of Universities*	No. of Universities on Web**	No. of Universities on Web with Statistics (or Relevant) Program
Algeria	62	15	5
Angola	14	2	0
Benin	15	1	1
Botswana	3	3	1
Burkina Faso	5	2	0
Burundi	6	1	0
Chad	10	0	0
Cameroon	18	10	6
Canary Islands	2	2	0
Cape Verde	1	1	0
Central African Republic	2	1	0
Comoros	1	0	0
Congo	1	0	0
Congo (Democratic Republic)	83	6	1
Cote D'Ivoire	8	4	1
Djibouti	1	1	0
Egypt	96	14	4
Eritrea	1	1	1
Ethiopia	9	5	1
Gabon	7	2	0
Gambia	1	1	1
Ghana	12	7	2
Guinea	10	2	0
Kenya	20	15	6
Lesotho	3	2	1
Liberia	12	4	1
Libya	19	2	2
Madagascar	11	6	2
Malawi	9	7	2
Mauritania	3	1	1
Mauritius	4	2	2

/cont…

ANNEX 2: AFRICAN UNIVERSITIES WITH A STATISTICS PROGRAM (Cont.)

Country	No. of Universities*	No. of Universities on Web**	No. of Universities on Web with Statistics (or Relevant) Program
Morocco	119	8	3
Mozambique	6	3	1
Namibia	4	3	1
Niger	6	2	0
Nigeria	59	27	12
Reunion	1	1	1
Rwanda	7	5	2
Senegal	4	3	2
Sierra Leone	3	2	2
Somalia	9	5	0
South Africa	32	26	17
Sudan	34	8	2
Swaziland	1	1	1
Tanzania	15	10	1
Togo	3	2	0
Tunisia	33	7	6
Uganda	29	9	3
Zambia	3	2	1
Zimbabwe	9	5	1
50	**826**	**249**	**97**

* *Sources:*

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ANNEX 3: UNIVERSITIES WITH A CO-OP OR INTERNSHIP COMPONENT IN THEIR STATISTICS PROGRAMS

Country	University / Faculty	Program Feature	Source
Kenya	University of Nairobi, School of Mathematics BSc and MSc Statistics MSc Social Statistics	1. Train statisticians for various government departments and other organizations 2. Students spend some time in a semester learning the practice at the organization	http://www.uonbi.ac.ke/faculties/faculty_page.php?fac_code=147
Nigeria	University of Ilorin, Department of Statistics BSc, MSc, PhD Statistics, Postgrad Diploma Statistics	1. Industrial Training Internship	http://www.unilorin.edu.ng/newsite/academy/deptofstatistic.htm
South Africa	University of KwaZulu-Natal, Faculty of Science and Agriculture BSc, BSc Hons, MSc Biometry, Statistics and Financial Statistics	1. Internship in Biostatistics with the medical research council and CAPRISA (Aids Research Unit) 2. Government internship at the National Census Office (Statistics South Africa)	http://www.ukzn.ac.za/prospective/pietermaritzburg.asp
Zimbabwe	University of Zimbabwe, Department of Statistics Diploma, BSc, BSc Hons, MSc	1. Students have been offered internships in banks, insurance companies, National Statistics Office and research organizations in the country	http://www.uz.ac.zw/science/statistics/

Cooperative Education: an academic program that integrates academic studies with career-related work experience and involves an arrangement of periods of study and periods of work experience. Work authorization is granted by the Designated School Official.

Internship Program: a period of apprenticeship when students work off-campus, under supervision, in a school, factory, hospital, business, laboratory, or government agency or program. It also allows students to learn practical applications of classroom material.

ANNEX 4: BENEFITS OF CO-OP AND INTERNSHIP PROGRAMS

Beneficiary	Benefits	Source
Student	1. Well-rounded education in both classroom and workforce (hands-on experience) 2. Provide flexibility for the course of education 3. Enhance understanding of course material 4. Have opportunity to develop new skills and expand knowledge 5. Improve by feedback from employer 6. Be in better position for future competition 7. Explore and better understand career options 8. Build network with potential employers 9. Get financial support	http://www.science.mcmaster.ca/cooped/about/Benefits.html http://www.sfu.ca/coop/stud_benefits.html http://coop.sheridaninstitute.ca/stu_benefits.cfm http://www.stvincent.edu/academics3#TjtaRMCmgqInyJ3E9OEQag
Employer	1. Bring fresh perspectives and enthusiasm to the workplace 2. Learn latest theories and ideas from the academic world 3. Meet short-term human resource needs 4. Have better assessment of student's performance for long-term recruiting needs 5. Reduce manpower and future recruiting costs 6. Bridge with academic institution	http://www.science.mcmaster.ca/cooped/about/Benefits.html http://explore.bradley.edu/scc/index.php?page=employers/internship_coop http://www.studica.com/internship/index.cfm?fuseaction=inter.details#benefits
Institution	1. Get feedback from employers on the program curriculum 2. Attract top-quality students 3. Enrich the general educational community 4. Enhance visibility and reputation 5. Get information on current R&D in employer sectors 6. Have opportunities for collaborative projects	http://www.science.mcmaster.ca/cooped/about/Benefits.html http://www.studica.com/internship/index.cfm?fuseaction=inter.details#benefits http://www.ilceia.org/benefits.html
Country	1. Improve the job market 2. Improve future education 3. Enhance human development 4. Improve national statistics	

The World Bank's Framework for Statistical Capacity Measurement: Strengths, Weaknesses, and Options for Improvement

Floribert Ngaruko[1]

Abstract

Using the results-chain approach to capacity building and the PARIS21 framework, this paper discusses the use of statistical activities and outputs by the World Bank to measure statistical capacity. The paper focuses on the strengths and weaknesses of the World Bank's approach, and explores options for improving the indicator that results from it. While international comparability and cost effectiveness are the main strengths of the approach, the overemphasis that it places on statistical activities and outputs to the detriment of characteristics of statistical systems and data-producing agencies represents its main weakness, which causes the indicator to capture performance instead of actual capacity. To improve the World Bank approach would require refining the method of aggregation of the ratings of various aspects of statistical capacity, activities and outputs, and more critically, to take due account of statistical capacity utilization, which is the missing link in the World Bank approach between statistical activities/outputs and statistical capacity.

Key Words: *Statistical capacity indicator, Capacity building, Capacity utilization, PARIS21, Capacity building results-chain framework*

Résumé

En recourant au cadre conceptuel de PARIS21 ainsi qu'à l'approche par la chaîne des résultats aujourd'hui utilisée dans le renforcement des capacités, cet article discute de l'utilisation par la Banque mondiale, des activités et de la production statistiques pour mesurer les capacités des systèmes statistiques des pays. L'article identifie les forces et les faiblesses de cette approche, et explore les options pour améliorer l'indicateur qui en résulte. Si la comparabilité au plan internationale et le faible coût sont les principaux atouts de l'approche, sa focalisation sur les activités et la production statistiques au détriment des caractéristiques des systèmes statistiques et des agences de production des données reste sa principale faiblesse, qui fait que l'indicateur reflète la performance

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This paper does not necessarily reflect the views of the ACBF or STATNET.

davantage que les capacités à proprement parler. Pour améliorer l'approche, le papier suggère l'affinement de la méthode d'agrégation des indicateurs des différentes composantes des systèmes statistiques, des activités et de la production statistiques, et surtout la prise en compte du degré d'utilisation des capacités existantes qui est le chaînon manquant dans l'approche de la Banque mondiale, entre activités/production et capacités statistiques.

Mots clés : *Indicateur de capacités statistiques, Renforcement des capacités, Utilisation des capacités, PARIS21, Approche du renforcement des capacités par la chaîne des résultats.*

1. INTRODUCTION

The World Bank (henceforth WB) has been rating countries around the world for their statistical capacity since 2004. The WB's indicator of statistical capacity uses information publicly available to assess three aspects, namely statistical practices, data collection activities, and statistics availability. Recently, the WB has indicated its intention to improve its framework for statistical capacity measurement by shifting toward a new approach focusing on four dimensions: institutional framework, statistical methodology, data sources, and data dissemination.[2]

The objective of this paper is to contribute to this improvement effort, notably by proposing an analysis of the strengths and weaknesses of the WB's existing approach to statistical capacity measurement, and by exploring some options for its enhancement. Specifically, the paper seeks to explore the rationale and modalities of the WB's use of statistical activities and outputs to measure statistical capacity, to determine the problems that this poses, and to devise some options as to how the WB's indicator could be improved to better capture actual statistical capacity.

The paper hypothesizes that the WB's focus on statistical activities and outputs to measure statistical capacity, to the detriment of aspects related to statistical systems and data-producing agencies, results in the indicator poorly reflecting actual statistical capacity. To support this hypothesis, the paper uses a two-pronged approach. First, the paper builds on the new understanding of, and approach to capacity and capacity enhancement. Indeed, the development of the WB's framework for measuring statistical capacity occurred when international efforts were underway to revamp

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[2]   Fantom and Watanabe (2008).

the approach to capacity building and align it to the paradigm of results-based management. These efforts resulted in the framework known as the "capacity building results-chain approach." The paper refers to this framework in its attempt to capture the very meaning of statistical capacity.

Second, the paper relies on recent developments in terms of the measurement of statistical capacity at the international level. The formulation of the WB's framework also took place at a time when there was considerable momentum to improve statistics, statistical capacity, and statistical capacity measurement in developing countries. In November 1999, this resulted in the launch of the PARIS21 Consortium, a global forum and network aimed at promoting and facilitating statistical capacity building and better use of statistics. It also led to the establishment of the PARIS21 Task Team, which in May 2001 was tasked with devising an approach to statistical capacity building measurement. For the purposes of this paper, the PARIS21 framework provides benchmarks against which the WB's approach to statistical capacity measurement can be assessed.

The paper's reliance on the capacity building results chain and on the PARIS21 approaches resonates not only with the specific subject matter but also with the instrumental role that the WB played in the development of these approaches. Indeed, not only did it spearhead the promotion of the capacity building results chain approach but, in concert with the UN, OECD, IMF, and the EC, the WB also co-founded the PARIS21 Consortium. Moreover, it was also part of the PARIS21 Task Team, and assumed the PARIS21 Task Team's secretariat.[3]

Using both the PARIS21 framework and the capacity building results chain approach, this paper explores the WB's use of statistical activities and outputs to measure statistical capacity. It identifies the problems that this poses, and provides insights into how the WB's indicator could be improved so as to better reflect statistical capacity.

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[3] The membership of the PARIS21 Task Team was as follows: the IMF, Chair (Ms. L. Laliberté, Chairperson, Mr. T. Morrison, Mr. J. Bové and Mr. S. Khawaja), the World Bank, Secretariat (Mrs. M. Harrison, Secretariat, Mr. M. Belkindas, and Mr. G. Eele), the UN Statistics Division, UNSD (Mr. W. de Vries), the UN Economic Commission for Latin America and the Caribbean, UN ECLAC (Ms. B. Carlson), and the UN Economic Commission of Europe, UNECE (Mr. J-E. Chapron), and AFRISTAT (Mr. Lamine Diop). The Consultants to the PARIS21 Task Team were Mr. D. Allen, Mr. T. Holt and Mr. J. van Tongeren.

The rest of the paper proceeds as follows. Following this introductory section, Section 2 focuses on the characteristics of the WB's indicator of statistical capacity, analyzes some of its advantages and shortcomings, and presents some of the questions that it leaves open. Section 3 identifies the aspects of the statistical capacity results chain that this indicator captures, and discusses an improvement in data aggregation as a requirement for the WB's indicator to better reflect statistical capacity. Section 4 focuses on capacity utilization as the missing link in the WB's approach between statistical capacity and statistical activities, and as a central factor that has to be taken into account for statistical activities and outputs to consistently reflect statistical capacity. Section 5 concludes the paper.

2.   THE FRAMEWORK

The WB's framework for measuring statistical capacity uses three broad components to derive a composite indicator of statistical capacity: (i) statistical practice, (ii) data collection, and (iii) statistics availability (see Annex 1). Statistical practices are captured by 10 indicators that refer to the base year of national accounts; the use (or not) of the balance of payments manual; the status of external debt reporting; the base year of the Consumer Price Index; the index of industrial production; the availability of IMF's import/export prices; the government finance accounting concept; the frequency of the enrollment reporting to UNESCO; the frequency of vaccine reporting to WHO; and the subscription to the IMF's Special Data Dissemination Standard. As regards data collection, five indicators are used. These include: the periodicity of population censuses; the periodicity of agricultural censuses; the periodicity of poverty-related surveys (IES, LSMS, etc.); the periodicity of health-related surveys (DHS, MICS, priority survey, etc.); and the completeness of vital registration systems. As for the cluster of statistical indicator availability, this comprises 10 indicators: income poverty, child malnutrition, child mortality, immunization, HIV/AIDS, maternal health, gender equality, primary school completion, access to water, and per capita GDP growth.

Within each of the three clusters cited above, the various items are scored on the same scale and given equal weight. To obtain the overall score of statistical capacity, the three components' scores are given equal weight (see Annex 1). Such overall scores are then used for comparisons among countries and over time.

Over the past years, the indicator has revealed substantial contrasts among the highest and lowest performers. For example, Egypt achieved a score of 89 on a zero-to-100 scale in 2007, against a score of only 17 for Liberia. The WB's indicator also shows important changes over time. For example, the scores for Nigeria and Rwanda rose from 51 and 58 in 2006 to 62 and 71 in 2007, respectively, suggesting that these countries' statistical capacities had improved by 22% over a single year. Over the same period, the scores for Libya, Guinea-Bissau, and the Central African Republic fell from 41, 37, and 42 in 2006 down to 31, 29, and 33 in 2007, pointing to a decline in statistical capacity by 24%, 22%, and 21% in these countries, respectively.

A closer look at these scores for the three dimensions of statistical capacity shows that variations over time are mostly due to changes in data collection in the Central African Republic, Guinea Bissau, Libya, and Nigeria. The figures suggest that in these countries, from 2006 to 2007 the magnitude of change in data collection ranged between 40% and 50%.

As these figures illustrate, the WB's indicator can result in huge variations over short periods. Given the time needed to build statistical systems, the question arises whether the indicator adequately captures statistical capacity. Indeed, the criticism has been made that the WB indicator obliges countries to continue to carry out statistical activities and produce outputs at regular intervals in order to maintain high scores, as to do otherwise would result in significant declines in their scores of statistical capacity.[4]

The relevance of the indicator has more specifically been questioned by national studies for its inability to reflect actual statistical capacity changes over time. For example, in Niger since 2004, there has been the enactment of a new law on statistics; the establishment of a National Council of Statistics; the transformation of the former Directorate of Statistics and National Accounts (DSCN) into the new and more dynamic National Institute of Statistics; and the transformation of statistical units in core ministries into fully-fledged Directorates. Other changes include improved coordination among data-producing agencies; the formulation of the National Statistical Development Strategy based on the PARIS21 principles; the provision of a substantially increased budget; better-trained and motivated staff; and improved work conditions.[5]

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[4]   ACBF (2007).
[5]   Gafishi et al. (2008).

In view of all the above changes, it is apparent that the capacity of Niger's statistical system has been significantly strengthened. Gafishi et al. (2008) argue that these changes have resulted in improved data collection and enhanced indicator availability to some extent, as well as in the National Institute of Statistics enjoying a reputation as an emerging center of excellence. However, the authors forcefully stress the contrast with the WB indicator scores, which have barely changed over the period despite these improvements. Accordingly, the authors call for further investigation into the reasons for this apparent paradox.[6]

To fully comprehend the strengths of the WB's indicator and the problems that it poses, it may be useful to look at its underlying framework and the context of its development. The WB began to use the approach at a time when the PARIS21 initiative, the first systematic attempt at the international level to develop statistical capacity building indicators, had already produced its framework for measuring statistical capacity. This framework provides for comprehensive reviews of national statistical systems, requiring detailed country visits. As has been pointed out by various commentators, the problem with the PARIS21 approach is that it is expensive and time-consuming. Moreover, it imposes an additional burden on the often-limited capacity of the statistical systems being evaluated, especially in low-income countries.[7] It is also likely to result in idiosyncratic descriptions that render international comparisons difficult.

The WB opted for a different, more limited approach to mitigate these shortcomings. This approach uses a smaller set of indicators (Annex 1), for which the data are publicly available, and which allow for the capture of differences in statistical capacity among countries and over time. In this context, the WB's success is undeniable, as it has cost-effectively been rating statistical capacity for 144 countries around the world since 2004.

The development of the WB's indicator of statistical capacity also occurred at a time when the popularization of the results-based management approach lent support to the emergence of another new framework, known as the "capacity building results chain framework" (Figure 1). This promotes analysis of cause and effect; clarifying the relationships among long-term goals, mid-term outcomes, and immediate objectives, and the resources, strategy, and actions required to achieve them in a results-oriented manner. The capacity building results chain framework also aims to identify

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[6]   Gafishi et al. (2008: 13).
[7]   ACBF (2007).

Figure 1: Capacity Building in the Results-chain Framework
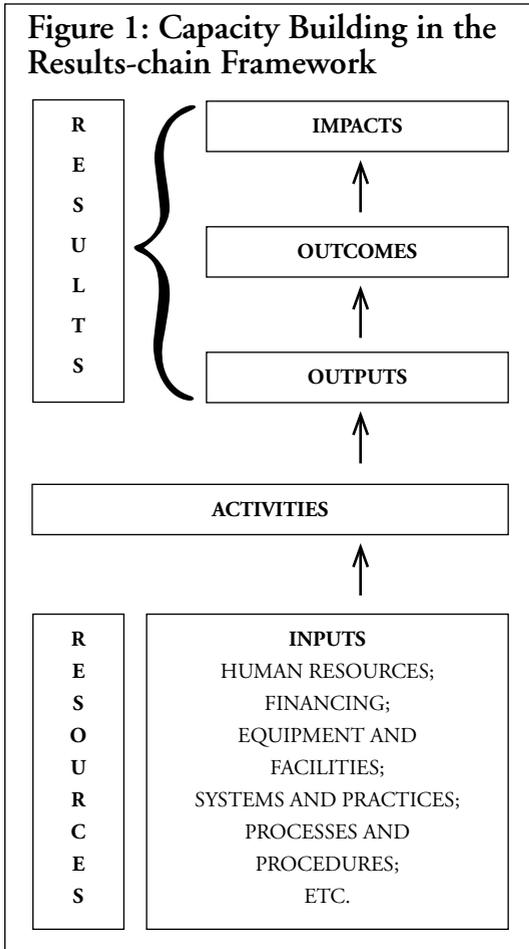
key assumptions and performance indicators for each stage of the process; and to visualize the process in context, by considering the external factors that might influence outcomes.

In such a framework, statistical capacity and statistical capacity enhancement are viewed as part of a chain going from statistical resources to activities, to outputs, to outcomes (as statistical indicators come to influence policymaking and development monitoring and evaluation, for example) and finally to impact (in terms of poverty reduction and welfare improvement, for instance).

The PARIS21 initiative followed this approach. Its stated objective was to develop demand-driven statistical capacity indicators as tools to be applied to specific goals. The approach aimed to measure the statistical capacity to meet those goals, as these would be geared toward statistical results to meet users' needs.[8]

Hence, in the light of the capacity results-chain approach and the PARIS21 framework, and in view of the aforementioned variations in the scores of statistical capacity, the WB's approach poses some questions. These include the following:

• Can actual statistical capacity be so volatile, as illustrated by the cases of Nigeria, Rwanda, Libya, Guinea-Bissau, and the Central African Republic?

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8   PARIS21 Task Team (2002a).

- Does the WB's statistical capacity indicator capture the relevant dimensions of statistical capacity?
- What – if any – corrections are required for the WB's indicator to reflect statistical capacity more consistently?

The next sections attempt to address these issues. However, first it may be useful to define statistical capacity, and to look at the implications of this definition for the WB's approach. This is the objective of the next section.

3.   CAPACITY VERSUS PERFORMANCE: WHAT DOES THE WB'S INDICATOR MEASURE?

The concept of capacity has frequently been given different definitions, as disparate motivations and objectives have led development actors to choose to address different aspects of capacity. For the purpose of this paper, capacity is simply and generally viewed as the *resources* of a society to achieve societal goals. At the level of an institution or agency, capacity represents the resources of that institution to deliver its mandate.

In the specific case of statistical systems, the experience of countries that have successfully enhanced statistical capacity shows clearly that statistical capacity building requires focusing on a wide spectrum of factors.[9] These include human resources and infrastructure (such as buildings and power, among others), and other material resources. Resources also include data-producing agency staff and human resources management practices, such as hiring and firing, promotion, rotation, training, and career development.[10]

Resources also include financing and its characteristics – such as its level, sources, and stability – which largely determine the flexibility and independence of the statistical system, as well as related processes and procedures that determine the efficiency of the use of funds. Resources should also include computing facilities, including the availability, maintenance, and updating of information technology infrastructure such as servers, communication network, and computers. Also falling under the rubric "resources" are transportation and communication systems equipment,

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[9] For example, see Gafishi et al. (2008) and Kiregyera (2006).
[10] PARIS21 Task Team (2002b).

inclusive of operational support, printing equipment, office supplies and sundries, and other aspects of the office environment.[11]

Last but not least, statistical practices and the regulatory framework of statistics are key resources of a statistical system. Statistical processes and procedures are resources as well, to the extent that they determine access to information, preserve confidentiality of individual data, ensure adequate coordination, planning, monitoring and evaluation of statistical operations, guarantee the independence of statistical activities, and ensure the accuracy, reliability, and accessibility of statistical data and metadata such as information on underlying concepts, definitions, classifications, methodology, data sources, accuracy, etc.

All this serves to confirm that the dynamics of statistical capacity – that is, the changes in the characteristics of statistical resources – are multifaceted. Statistical capacity enhancement may consist in increasing the number of staff and their skills and/or altering human resources management practices so that a core contingent of highly trained staff can be retained and maintained through regular recruitment and training. Other changes that may be construed as statistical capacity building include:

- improvements in the statistical regulatory framework, systems and practices, and processes and procedures;
- the provision and upgrading of infrastructure such as buildings, information technology resources;
- improvements in other material resources such as transportation and communication systems equipment and other aspects of the office environment; and
- the improvement of financing and its characteristics.

In light of the capacity building results chain framework discussed earlier, it appears that the WB's indicator mostly captures statistical activities and outputs that are *outcomes* of statistical resources rather that statistical resources per se. For instance, the 10 items that determine the score of statistical indicator availability clearly capture outputs. As for statistical activities, they are scattered in the statistical practice and data collection clusters. They include population censuses, agricultural censuses, poverty surveys, and health surveys. They also include UNESCO reporting, and setting a new base for national accounts, the consumer price index, import and export price indexes, and industrial production indexes.

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[11] PARIS21 Task Team (2002b).

In fact, of the total of 25 items that the WB's indicator encompasses, as many as 19 items (accounting for nearly 77% of the overall score) relate to statistical activities and outputs. Only six items (accounting for about 23% of the overall score) relate to statistical capacity aspects. These are indicators of whether (or not) the UN considers the vital registration system coverage as complete; whether the country has subscribed to the Special Data Dissemination Standard; national and WHO/UNICEF estimates of the national immunization coverage are consistent; government finance accounts are consolidated; the data used for external debt reporting are actual or preliminary; and the latest edition of the Balance of Payments Manual is in use (see Annex 1). This demonstrates that the WB's indicator of statistical capacity is mostly driven by statistical activities and outputs.

The fact that the WB's indicator is largely driven by statistical activities and outputs and only marginally by statistical resources means that it mostly captures statistical performance rather than statistical capacity. Such performance is specifically captured quantitatively, particularly in terms of frequency. As Annex 1 illustrates, the higher the frequency of statistical activities and outputs, the higher the score. As regards the few items that focus on actual capacity, they mostly reflect the ability of the statistical system to produce quality statistical outputs and are at the core of the Data Quality Assessment Framework (DQAF) that has been developed by the IMF.

The WB indicator's focus on performance rather than capacity poses a conceptual problem. While capacity and performance are related – in the sense that the latter is an outcome of the former – yet they are different, and performance indicators cannot be substituted for capacity enhancement indicators. As Mizrahi argues, the failure to distinguish between the two can lead to inappropriate policy. According to the author, unlike performance indicators, indicators of capacity and capacity enhancement provide information about sustainability by revealing information on the extent of institutionalization or routinization of improvements to a system.[12]

This principle holds true not only for those cases where performance is reflected in quantitative terms; it is valid also in those cases where performance is captured in *qualitative* terms. In this context, statistical capacity measurement has to be approached in a different way to mere statistical quality measurement. As the PARIS21 Task Team forcefully argued, a statistical output entirely financed and executed through external sources

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[12] Mizrahi (2003: 5).

may be of high quality, yet be a poor measure of statistical capacity in terms of domestic expertise and sustainability. Accordingly, the PARIS21 Task Team emphasized the need for a sound statistical capacity measurement framework to take account of indicators applicable to agencies (e.g. central statistical agencies, the statistical units of central banks and line ministries) that produce statistical outputs.[13]

In some ways, the weakness of the WB's indicator of statistical capacity is partly due to its method of aggregating the various items it considers to be relevant dimensions of statistical capacity. Indeed, minimizing the relative weights of statistical activities and outputs would improve the indicator. The most straightforward and radical option would be to remove the items related to activities and outputs from the indicator (or to apply a zero weight to them), and to keep only the system- and agency-related aspects. Such an option is particularly appealing since the WB's approach, by indiscriminately using inputs and outputs to measure statistical capacity, seems to double-count a number of aspects and to mix up flows (periodic activities and outputs) and stocks (improvements that occur once and for all) or performance- and capacity-related aspects.

However, despite its attraction, the option of totally eliminating indicators of activities and outputs from the overall WB indicator raises a serious problem, which relates to the complexity of the relationship between inputs and outputs in statistical processes. Indeed, this relationship is more complex than suggested by the earlier discussed capacity building results chain framework.

Statistical activities and outputs cannot be regarded simply as an outcome of statistical resources, as some may also serve as inputs for downstream activities and outputs. For instance, a number of resources that form the capacity base of a statistical system are required to carry out household surveys to obtain survey data. These data are necessary to undertake further work to produce statistical indicators, such as a consumer price index, inequality index, and employment statistics, among others. In such a process, household surveys appear to be the first-level activity, while the calculation of the indicators forms the second-level activity. Between the two are the survey data as a first-level output. The statistical indicators constitute second-level outputs.

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[13] PARIS21 Task Team (2002a: 7).

Therefore in actual statistical processes, a number of "intermediate" activities and products can be viewed as both outputs and inputs, depending on the stage considered. The PARIS21 Task Team forcefully acknowledged the complexity of this relationship between inputs and outputs in statistical processes. Not only did they view survey data as inputs for the production of final statistical outputs. They also recognized that statistical activities contribute to the maintenance and development of basic resources of statistical systems such as skills, as they allow for such skills to be continuously in use.[14] Thus, not only can statistical activities and outputs serve as resources or inputs for downstream activities and outputs; there is also a retroactive loop, whereby statistical activities and outputs impact on basic statistical capacity. Such a loop makes it even more difficult to isolate resources from results, and inputs from outputs in statistical processes.

Another compelling reason to retain statistical activities and outputs in the WB's indicator is because they are needed as proxies for statistical basic resources, which would otherwise be difficult to quantify. The PARIS21 Task Team suggests, for example, that crude measures of volume activities could be considered as a proxy for the mass of general statistical expertise of a data-producing agency.[15] In other words, although some statistical activities are by no means relevant dimensions of statistical capacity, they may serve as proxies. In light of the relationship between statistical resources and statistical activities/outputs, the use of the latter may be appropriate, especially as a number of statistical aspects for which comparable data exist internationally relate to statistical activities and outputs, more than to statistical systems and data-producing agencies.

In conclusion, it may be useful to highlight the serious challenge that the use of statistical activities and outputs represents to the WB approach. As argued in this section, relying on statistical activities and outputs to measure statistical capacity causes the indicator to capture performance rather than capacity. Yet, statistical activities and outputs need to be used as proxies of genuine dimensions of statistical capacity that would otherwise not be accounted for. The greater the weight of such dimensions in statistical capacity, the greater the weight that needs to be given to statistical activities and outputs, hence the greater the distortion in the overall indicator. The next section argues that this problem may be mitigated by, first, a better understanding of the relationship between statistical capacity

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[14] PARIS21 Task Team (2002b).
[15] PARIS21 Task Team (2002b: 12).

and statistical activities and, second, by adequately accounting for capacity utilization.

4.   TAKING CAPACITY UTILIZATION INTO ACCOUNT

In recent years, the development community has increasingly recognized that in most African countries, capacity is often underutilized as a result of the misallocation of available skills and talents. Some authors have even found that, in a number of circumstances, capacity is prevented from being put to work.[16] By and large, the literature points to incentives provided by the prevailing public sector management system and governance factors to explain the underutilization of capacity. As Obadan argues, when talents are misallocated, and recruitment and promotions based on personal connections and loyalties rather than on merit, existing capacity is likely to be underutilized.[17]

Capacity utilization may vary across time and space, and be understood in quantitative and qualitative terms. A society may utilize different amounts of its capacity at different times, just as different societies may utilize variable amounts of their capacities at a given time. On the other hand, a society may utilize the same amount of its capacity but with different efficiency at different times; whereas different societies may utilize the same amount of their capacity but with different efficiency at a given time. Thus, not only is the relationship between a statistical system's activities/outputs and its capacity very complex, as earlier discussed, but it is by no means linear. This relationship is affected by many factors, which result in different rates of capacity utilization in different circumstances.

There is a growing consensus to consider that a society's capacity to utilize effectively and efficiently its capacity is a key aspect of its capacity per se, and that the effort to increase the rate of utilization of its capacity should be considered as capacity enhancement in its own right.[18] This means that capacity utilization could be considered as a capacity resource. Yet, capacity utilization is a *particular* resource. This particularity resides in the fact that in specific circumstances, capacity utilization and overall capacity may evolve independently, or even in opposition.

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[16] Obadan (2007).
[17] Ibid.
[18] Obadan (2005).

To illustrate, let *C*, *A*, and *U* be statistical capacity, statistical activity, and the rate of utilization of the existing statistical capacity *C* in period *t*, respectively. One then can represent the relationship among these variables as follows:

$$A_t = \alpha C_t U_t \qquad (1)$$

α being a constant that captures the average "productivity" of statistical resources. Equation (1) simply means that at any point of time *t*, statistical activity is undertaken using all or part of existing statistical resources. Taking the logarithm and then the difference of equation (1) yields:

$$\Delta A = \Delta C + \Delta U \qquad (2)$$

with Δ indicating the percentage change in the amount of the concerned variable during the period. Equation (2) can be rearranged as follows:

$$\Delta C = \Delta A - \Delta U \qquad (3)$$

As Equation (3) shows, a given change in the amount of statistical resources is equal to the difference between the change in statistical activity and the change in utilization of this amount of statistical capacity, all changes expressed in terms of percentage points. Thus, Equation (3) implies that after a period of low statistical activity, during which only part of existing statistical resources were in effective use, additional statistical activity and outputs could be taken up by mobilizing latent capacity rather than by acquiring fresh capacity. In such a situation, the increase in statistical activity would be absorbed by the increase in the rate of utilization of existing capacity without any impact on the overall mass of resources that the statistical system has at its disposal.

Equation (3) also means that if during a period, the change in the rate of capacity utilization were higher than the change in the amount of statistical activities undertaken in that period, then statistical capacity would have declined, not increased, during that period, even if the change in statistical activity were positive. In fact, a given statistical activity growth rate implies a commensurate change in statistical capacity only if the rate of capacity utilization remains constant during that period. This is what the WB implicitly assumes, causing its approach to rely on a highly restrictive and largely unrealistic assumption.

Indeed, this condition is likely to be met in two particular circumstances, namely situations where existing capacity is in full use and where there is no possibility to further increase it, or where latent capacity exists but no actionable policy is available or possible to mobilize such unused capacity. In such situations, a given percentage point increase in the amount of statistical activities undertaken would mean a commensurate increase in statistical capacity, since one would have, for example, to hire and train new staff, and equip them with new equipment to take up these additional activities. If existing capacity were not fully used, and actionable policy available or possible to mobilize (at least partially) the latent capacity, then additional activity would translate into the use of all or part of the unused capacity, resulting in the new tasks being taken up without a commensurate increase in statistical capacity.

While this suggests that latent capacity allows for the absorption of the impact of changes in statistical activity/outputs on statistical capacity, it is noteworthy that in some circumstances it could amplify such an impact. For instance, if the volume of statistical activities and outputs increases at a given rate during a given period, while for some reason the rate of capacity utilization is decreasing over the same period, then statistical capacity would have increased at a rate higher than that of statistical activity and outputs.

Equation (3) suggests that the relationship between statistical capacity and statistical activities/outputs spills over a third variable, that is, capacity utilization. The above model suggests that there is an identity linking changes in the level of statistical capacity in any given country with changes in the level of statistical activities and outputs, and changes in statistical capacity utilization. The relationship among these three variables may be compared to that among the angles of a triangle, as the interdependency among them means that to derive reliably the variation in any of the three variables, a sufficient condition is to know variations in the other two variables.

Thus, the "Capacity–Activity–Capacity Utilization Triangle" model illustrates a relationship between statistical capacity and statistical activity/outputs that is more sophisticated than the one assumed by the WB, and which implies a mechanistic and univocal impact of changes in statistical activities/outputs on statistical capacity. The model rather suggests that taking capacity utilization into account every time statistical activities and outputs are used to measure statistical capacity is crucial if the WB's indicator is to reliably capture actual statistical capacity. One interesting question that this conclusion raises is how, as an improvement to the WB's

approach to statistical capacity measurement, accounting for capacity utilization would compare with the earlier-mentioned need to improve on indicator aggregation.

One consequence of an improved method of score aggregation in the WB's approach would be a reduction in the distortion created by the overemphasis on statistical activities and outputs to the detriment of statistical capacity. An improved aggregation method would mean the WB's approach giving greater weight to statistical resources than to statistical activities and outputs, leading to a reduction in the distortion and to less volatility in the overall score of statistical capacity. Furthermore, it would mean less pressure on countries to continue to carry out statistical activities and to produce statistical outputs at regular intervals in order to maintain high scores, as is the case under the current measurement system.

However, none of these problems would totally disappear solely as a result of an improved aggregation method. Indeed, these problems cannot disappear as long as statistical activities and outputs have to be used as proxies for those aspects of statistical capacity that would not be accounted for otherwise. In circumstances where such aspects represent a significant share of statistical capacity, the problem of volatility would be particularly acute, since scores of statistical activities and outputs would have to be given relatively greater weight to account for these aspects adequately.

In contrast, taking capacity utilization into account would likely improve the WB's measurement system considerably. This is borne out by the perspective that the "Capacity–Activity–Capacity Utilization Triangle" model offers to address the problem of volatility. Specifically, the apparent volatility of statistical capacity, as it results from the WB's current approach, is largely a consequence of the neglect of capacity utilization, since this approach assumes that variations in statistical activity and outputs imply commensurate variations in statistical capacity.

A proportion of the changes in statistical activities may simply be absorbed by changes in statistical capacity utilization, implying that variations in statistical activity/outputs do not mean commensurate variations in statistical capacity. By the same token, countries would not have to continue to carry out statistical activities and to produce statistical outputs at regular intervals to maintain high scores, since part or the totality of these activities and outputs could be undertaken using existing capacity.

Thus, the "Capacity–Activity–Capacity Utilization Triangle" model provides a plausible explanation for the abnormally high volatility of statistical capacity as measured by the WB's indicator. Furthermore, it allows for a more accurate envisioning of the relationship between statistical capacity and statistical activities and outputs. In this model, capacity utilization is like a filter placed between statistical capacity and statistical activities/outputs to separate those variations in statistical activities/outputs that are associated with changes in latent capacity, from those changes that are genuinely associated with variations in actual statistical capacity.

Hence, whereas the WB's indicator wrongly attributes the bulk of statistical activities and output variations to the change in statistical capacity systematically, the "Capacity–Activity–Capacity Utilization Triangle" model makes up for this weakness. The model makes it clear that capacity utilization is the missing link in the WB's approach to statistical capacity measurement, between statistical capacity and statistical activities and outputs.

5.   CONCLUSION

The objectives of this paper were to explore the rationale and modalities of the WB's use of statistical activities and outputs to measure statistical capacity, to identify the problems that this poses, and to devise some options on how the WB's indicator could be improved so as to better capture actual statistical capacity. To address these issues, the paper referred to the PARIS21 framework and the capacity building results chain approach. Choosing to use these frameworks was particularly apposite, given the paper's subject matter and the central role that the WB played in their emergence and promotion.

The paper identified two major shortcomings in the WB's approach, which have resulted in its failure to adequately capture statistical capacity. These are (i) its overreliance on statistical activities and outputs and (ii) its neglect of statistical capacity utilization. These compel a country to carry out statistical activities at regular intervals in order to maintain a high score; they also explain why statistical capacity, as measured by the WB's indicator, appears to be highly volatile. The interactions between these two factors tend to aggravate the bias of the WB's indicator: the greater the reliance of the indicator on statistical activities and outputs, the greater the impact of its neglect of capacity utilization. Conversely, if the WB's approach properly took capacity utilization into account, then the impact of its emphasis on statistical activities and outputs would be moderated.

In this paper, an effort has been made to identify options for an improved approach. It was argued that such an approach should be consistent with the PARIS21 framework and the capacity building results chain approach as much as possible, while not conflicting with cost-effectiveness and international comparability. The latter two factors were identified as the bedrock of the WB indicator's success to date, in spite of its highlighted weaknesses.

Although removing activity- and output-related items from the WB indicator might initially appear to be the most appropriate solution to the problem, this option has been rejected for a number of reasons. One is the difficulty in clearly distinguishing between inputs and outputs in statistical processes. Indeed, not only do some activities and outputs serve as inputs for downstream activities and outputs, but there also exists a retroactive loop whereby downstream activities and outputs in turn affect basic statistical capacity. Moreover, the data available to measure statistical capacity in a cost-effective manner and to allow for international comparability, mostly relate to statistical activities and outputs, and only marginally to actual statistical capacity.

Against such a background, it was argued that improvements in the aggregation of various items in the WB's indicator methodology might be a better option for an improved measurement system. Also, the paper argued that when using scores of statistical activity and outputs to measure statistical capacity, taking due account of statistical capacity utilization would be helpful.

These improvements would have differing impacts, however. An improved aggregation method would reduce the distortion caused by the use of the volume of statistical activities and outputs to measure statistical capacity. However, taking into account statistical capacity utilization would allow differentiation in statistical activities and outputs between, on the one hand, those associated with changes in actual statistical capacity and, on the other, those likely to be absorbed by changes in mere capacity utilization. It is therefore recommended that the WB should work on improving the aggregation method, and more importantly, take into account capacity utilization in its approach, as the missing link between statistical activities and outputs and statistical capacity.

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ANNEX 1: COMPONENTS OF THE WORLD BANK'S INDEX OF STATISTICAL CAPACITY

I. STATISTICAL PRACTICE				
Indicators	**1**	**0**	**Max**	**Weight**
1. National accounts base year	Within last 10 years or annual chain linking	Otherwise	1	10
2. Balance of payments manual in use*	Balance of Payments Manual, the fifth edition	Otherwise	1	10
3. External debt reporting status*	Actual or preliminary	Otherwise	1	10
4. Consumer Price Index base year	Within last 10 years or annual chain linking	Otherwise	1	10
5. Industrial production index	Produced and available from IMF	Otherwise	1	10
6. Import/export prices	Produced and available from IMF	Otherwise	1	10
7. Government finance accounting concept*	Consolidated central government accounts	Otherwise	1	10
8. Enrollment reporting to UNESCO	Annual or missed reporting only once in the last 4 years	Otherwise	1	10
9. Vaccine reporting to WHO*	Nationally reported data on measles vaccine cover-age consistent with WHO estimates	Otherwise	1	10
10. IMF's Special Data Dis-semination Standard*	Subscribed	Otherwise	1	10
			Maximum total score: 100	

II. DATA COLLECTION					
Indicators	**2**	**1**	**0**	**Max**	**Weight**
1. Periodicity of population census	≤ 10 years		Otherwise	2	10
2. Periodicity of agricultural census	≤ 10 years		Otherwise	2	10
3. Periodicity of poverty related surveys (IES, LSMS, etc.)	≤ 3 years	≤ 5 years	Otherwise	2	10
4. Periodicity of health related surveys (DHS, MICS, Priority survey, etc)	≤ 3 years	≤ 5 years	Otherwise	2	10
5. Completeness of vital registration system*	Complete		Otherwise	2	10
				Maximum total score: 100	

/cont…

ANNEX 1: COMPONENTS OF THE WORLD BANK'S INDEX OF STATISTICAL CAPACITY (Cont.)

III. STATISTICS AVAILABILITY						
Indicators	**3**	**2**	**1**	**0**	**Max**	**Weight**
1. Periodicity of income poverty indicator	≤ 3 years	≤ 5 years	> 5 years	Otherwise	3	5
2. Periodicity of child malnutrition indicator	≤ 3 years	≤ 5 years	> 5 years	Otherwise	3	5
3. Periodicity of child mortality indicator			National or international estimates available	Otherwise	1	5
4. Immunization indicator			Annual	Otherwise	1	5
5. HIV/AIDS indicator			National or international estimates available	Otherwise	1	5
6. Periodicity of maternal health indicator	≤ 3 years	≤ 5 years	> 5 years	Otherwise	3	5
7. Periodicity of gender equality in education indicator	≤ 3 years	≤ 5 years	> 5 years	Otherwise	3	5
8. Primary completion indicator			At least one observation in the last 5 years	Otherwise	1	5
9. Access to water indicator			National or international estimates available	Otherwise	1	5
10. Periodicity of GDP growth indicator	Annual	≤ 1.5 years	> 1.5 years	Otherwise	3	5
Maximum total score: 100						

Source: World Bank.
* Components not related to statistical activities and outputs.

Editorial Policy

The African Statistical Journal was established to promote the understanding of statistical development in the African region. It focuses on issues related to official statistics as well as the application of statistical methodologies to solve practical problems of general interest to applied statisticians. Of particular interest will be an exposition of: how statistics can help to illuminate development and public policy issues like poverty, gender, environment, energy, HIV/AIDS, etc.; development of statistical literacy; tracking national and regional development agenda; development of statistical capacities and effective national statistical systems; and the development of sectoral statistics e.g. educational statistics, health statistics, agricultural statistics, etc.

In addition to individual academic and practicing statisticians, the Journal should be of great interest to a number of institutions in the region including National Statistical Offices, Central Banks, research and training institutions, subregional economic groupings, and international development agencies.

The Journal serves as a research outlet and information sharing publication among statisticians and users of statistical information mainly in the African region. It publishes, among other things:

- Articles of an expository or review nature that demonstrate the vital role of statistics to society rather than present technical materials;
- Articles on statistical methodologies with a special emphasis on applications;
- Articles about good practices and lessons learned in statistical development in the Africa region;
- Opinions on issues of general interest to the statistical community and users of statistical information in the region;
- Notices and announcements on upcoming events, conferences, calls for papers;
- Recent statistical developments and anything that may be of interest to the statistical community in Africa.

The papers, which need not contain original material, should be of general interest to a wide section of professional statisticians in the region.

All manuscripts will be reviewed and evaluated on content, language and presentation.

Ligne éditoriale

Le Journal statistique africain a été établi pour favoriser la compréhension du développement statistique dans la région africaine. Il se concentre sur des questions liées aux statistiques officielles aussi bien que l'application des méthodologies statistiques pour résoudre des problèmes pratiques d'intérêt général pour les statisticiens de métier. L'intérêt particulier est de montrer comment les statistiques peuvent aider à mettre en exergue les problèmes de développement et de politique publique tels que la pauvreté, le genre, l'environnement, l'énergie, le VIH/ SIDA, etc.; le développement de la culture statistique; la prise en compte des questions de développement régional et national; le développement des capacités statistiques et des systèmes statistiques nationaux efficaces; et le développement des statistiques sectorielles comme les statistiques d'éducation, de santé, des statistiques agricoles, etc.

En plus des universitaires et des statisticiens de métier, le Journal devrait revêtir un grand intérêt pour les institutions de la région, notamment les offices nationaux de statistiques, les banques centrales, les instituts de recherche et les organisations économiques sous-régionaux et les agences internationales de développement.

Le Journal constitue un document de recherche et d'information entre les statisticiens et les utilisateurs de l'information statistique, principalement dans la région africaine. Il publie entre autres:

- des articles sur le plaidoyer en matière de statistique qui démontrent le rôle essentiel des statistiques dans la société plutôt que la présentation des outils techniques,
- des articles sur les méthodologies statistiques, avec un accent particulier sur les applications,
- des articles sur les meilleures pratiques et les leçons tirées de la région,
- des avis sur des questions d'intérêt général pour la communauté statistique et les utilisateurs de l'information statistique dans la région africaine,
- des informations et des annonces sur les prochains événements, les conférences, les appels à contribution pour des papiers, et
- les développements statistiques récents et tout autre aspect susceptible d'intéresser la communauté statistique dans la région.

Les articles, qui n'ont pas besoin de contenir du matériel original, devraient intéresser une grande partie des statisticiens professionnels dans la région.

Tous les manuscrits seront passés en revue et évalués sur le contenu, la langue et la présentation.

Guidelines for Manuscript Submission and Preparation

Submissions

Manuscripts in English or French should be sent by email to the Co-Chairpersons, Editorial Board at: c.lufumpa@afdb.org and BKiregyera@uneca.org with a copy to statistics@afdb.org.

Title

The title should be brief and specific. The title page should include the title, the author's name, affiliation and address. The affiliation and address should be given as a footnote on the title page. If the manuscript is co-authored, the same information should be given for the co-author(s).

Abstract, Key Words, and Acknowledgments

A short abstract of about 150 words must be included at the beginning of the manuscript, together with up to 6 key words used in the manuscript. These key words should not repeat words used in the title. Acknowledgments, if any, should be inserted at the bottom of the title page.

Sections and Numbering

Major headings in the text should be numbered (e.g. "**1. INTRODUCTION**"). Numbered subheadings (e.g. "**1.1 The establishment of the NSDS**") may be used but thereafter sub-subheadings should be unnumbered. Main body text in the form of paragraphs should not be numbered.

Formatting

Please use minimal formatting as this will facilitate harmonization of all the papers. As your default, keep to "normal" (12 pt. Times New Roman) for main text with a single line space between paragraphs. Do not apply "body text" as an inbuilt style. The levels of heading need to be easily identifiable. We recommend all capitals bold for the first level of heading in the main text (e.g. "**1. INTRODUCTION**"); thereafter bold upper and lower case for subheadings (e.g. "**1.1 The establishment of the NSDS**") and unnumbered bold italic (e.g. "***Creating a culture of cooperation***") thereafter. Please refer to the latest volume of the AJS as a guide.

House Style

The Bank's house style is US rather than British spellings (e.g. "organization" not "organisation"; "program" rather than "programme", "analyze" etc.). Use % rather than "percent" or "per cent" and double rather than

single quotation marks. Dates should be US style (e.g. December 11, 1985 not 11 December 1985).

Tables and Figures
Tables and figures should be numbered and given a title. These should be referred to in the text by number (e.g. "See Table 1"), not by page or indications such as "below" or "above".

Equations
Any equations in the paper should be numbered. The numbers should be placed to the right of the equation.

References
A list of references should be given at the end of the paper (to precede the Annexes, if included). The references should be arranged alphabetically by surname/name of organization. Where there is more than one publication listed for an author, order these chronologically (starting with the earliest). The references should give the author's name, year of publication, title of the essay/book, name of journal if applicable. Use a, b, c, etc. to separate publications of the same author in the same year. Titles of journals and books should be in italic; titles of working papers and unpublished reports should be set in double quotation marks and not italicized.

Examples:

Fantom, N. and N. Watanabe (2008), "Improving the World Bank's Database of Statistical Capacity," *African Statistical Newsletter*, vol. 2, no. 3, pp. 21-22.

Kish, L. (1988a), "Multipurpose Sample Designs," *Survey Methodology*, vol. 14, no. 3, pp. 19-32.

Kish, L. (1988b), *A Taxonomy of Elusive Populations*, Proceedings of the Section on Survey Research Methods, American Statistical Association, pp. 44-46.

Herzog, A. R. and Dielman, L. (1985). "Age Differences in Response Accuracy for Factual Survey Questions," *Journal of Gerontology*, vol. 40, pp. 350-367.

World Bank (2006), *Statistical Capacity Improvement in IDA Countries – Progress Report*. Washington DC: The World Bank.

Cross References

In the main body of the article, cross-references should be Harvard-style, e.g. (Kish 1988a; Herzog and Dielman 1985: 351). For cross-references to three or more authors, only the first surname should be given, followed by et al., although the names of all the authors must be provided in the References entry itself. Abbreviations ibid. and op. cit. should not be used in the text or in footnotes.

Instructions pour la préparation et la soumission de manuscrits

Soumission

Les manuscrits en anglais ou en français doivent être envoyés aux présidents du comité de rédaction par email aux adresses suivantes c.lufumpa@afdb.org et BKiregyera@uneca.org avec copie à statistics@afdb.org.

Titre

Le titre devrait être bref et détaillé. La page de titre doit inclure le titre du papier, le nom de l'auteur, l'affiliation et l'adresse. L'affiliation et l'adresse doivent figurer comme note de bas de page. Si le manuscrit est produit par des coauteurs, la même information doit être donnée pour les coauteurs.

Résumé, mots clés et remerciements

Un résumé court d'environ 150 mots doit être inclus au début du manuscrit ainsi qu'environ 6 mots clés utilisés dans le manuscrit. Les mots clés ne doivent pas répéter les mots utilisés dans le titre. Les remerciements, s'il y en a, doivent être insérés en bas de la page titre.

Section et numérotation

Les principaux titres doivent être numérotés (par exemple "**1. INTRODUCTION** "). Les sous-titres numérotés (par exemple "**1.1 L'élaboration de SNDS**") peuvent être employés mais par la suite les sous sous-titres ne devraient pas être numérotés. Le corps principal du texte sous forme de paragraphes ne devrait pas être numéroté.

Formatage

Veuillez utiliser le formatage minimal car ceci facilitera l'harmonisation de tous les articles. Garder par défaut le format "normal" (12 pt. Times New Roman) pour le texte principal avec l'espace d'une seule ligne entre les paragraphes. Ne pas appliquer le "corps de texte " en tant que modèle intégré. Les niveaux du titre doivent être facilement identifiables. Nous recommandons les majuscules en gras pour le premier niveau titre dans le texte principal (par exemple "**1. INTRODUCTION**"); ensuite les lettres minuscules en gras pour les sous-sections (par exemple "**1.1 L'élaboration de la SNDS**") et ensuite l'italique en gras sans numérotation (par exemple "***créant une culture de coopération***").Veuillez vous référer au dernier volume du JSA comme guide.

Tables and Figures

Les tableaux et les graphiques doivent être numérotés et comporter un titre. Ceux-ci devraient être mentionnés (par exemple "voir Tableau 1")

dans le texte par le nombre correspondant, et non par une indication de page ou par d'autres indications telles que "ci-dessous" ou "au-dessus de".

Équations

Toutes les équations dans le papier doivent être numérotées. Les nombres doivent être placés à la droite de l'équation.

Bibliographie

Une liste de références doit être fournie à la fin de l'article (avant les annexes, le cas échéant). Les références doivent être classées par ordre alphabétique selon le nom de l'auteur ou de l'organisation. Là où il y'a plus d'une publication listée pour un auteur, elles doivent être classées chronologiquement (en commençant par les plus récents). Les références doivent donner le nom de l'auteur et l'année de publication, le titre du livre, le nom du journal le cas échéant. Utiliser a, b, c, etc. pour séparer les publications du même auteur au cours der la même année. Les titres des journaux et des livres devraient être en italique; les titres des documents de travail et des rapports non publiés devraient être placés dans de doubles guillemets et ne pas être imprimés en italique.

Exemples :

Fantom, N. et N. Watanabe (2008), "Improving the World Bank's Database of Statistical Capacity," *African Statistical Newsletter*, vol. 2, no. 3, pp. 21-22.

Kish, L. (1988a), "Multipurpose Sample Designs," *Survey Methodology*, vol. 14, no. 3, pp. 19-32.

Kish, L. (1988b), *A Taxonomy of Elusive Populations*, Proceedings of the Section on Survey Research Methods, American Statistical Association, pp. 44-46.

Herzog, A. R. and Dielman, L. (1985). "Age Differences in Response Accuracy for Factual Survey Questions," *Journal of Gerontology*, vol. 40, pp. 350-367.

World Bank (2006), *Statistical Capacity Improvement in IDA Countries – Progress Report*. Washington DC: The World Bank.

Renvois

Dans le corps principal de l'article, les renvois devraient suivre le modèle de Harvard, par exemple (Kish 1988a; Herzog et Dielman 1985 :351). Pour des renvois à trois auteurs ou plus, seulement le premier nom de famille devrait être donné, suivi par et al., bien que les noms de tous les auteurs doivent être fournis dans la Bibliographie elle-même. Les abréviations ibid. et op. cit. ne devraient pas être employées dans le texte ou dans les notes de bas de page.

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Mrs. Margaret Chenda Mashinkila, Senior Gender Specialist, AfDB, Tunis, Tunisia

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Mme Sandra Jones, Consultante éditorialiste, Royaume-Uni (E-mail: sandra.jones@writemode.com)

Mme Margaret Chenda Mashinkila, Spécialiste senior des questions genre, BAD, Tunis, Tunisie

Second Meeting of the African Group on National Accounts (AGNA II)

Tunis, July 2-4, 2008

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1.   PREAMBLE

The Statistics Department of the African Development Bank (AfDB) hosted from July 2-4, 2008 in Tunis, Tunisia, the second meeting of the African Group of National Accounts (AGNA). The main objective of the meeting was to (i) design a strategy for the implementation of the revised 1993 System of National Accounts (SNA 93) – since recently called SNA 2008 - in the African context, (ii) follow-up on the recommendations of the first workshop of the AGNA held in Lusaka from April 7-11, 2008, (iii) review the status of the submission of time series data (2003-2007) of the uses of Gross Domestic Product (GDP) by African countries and the breakdown of GDP estimates for the year 2006 following the 200 basic headings of the ICP-Africa classification.

Representatives of AfDB, the Economic Commission for (ECA), the African Union Commission (AUC), African subregional economic communities (ECCAS, ECOWAS, COMESA, and SADC), and of AFRISTAT attended the meeting and presented progress reports on the various objectives of the meeting. National accounts experts drawn from 10 African countries were also invited and participated in the workshop proceedings. In attendance were also INSEE-France, ONS-UK, the IMF, the World Bank and Johns Hopkins University representatives.

2.   THE AFRICAN STRATEGY

A framework of strategic lines and strategic objectives was proposed by the AfDB and endorsed by the workshop participants. All in all, five strategic lines were presented, with a view to optimizing the compilation of National Accounts on the continent. Each strategic line is further subdivided into strategic objectives, as shown below.

Strategic Lines		Strategic Objectives	
1	Provide Africa with an SNA suited to its socio-economic specificities	1.1	Develop the first African System of National Accounts (ASNA) derived from the revised 2008 SNA
		1.2	Prepare methodological handbooks and guidelines for good practices
2	Improve the outcomes of the ICP-Africa in the context of national accounts	2.1	Increase the capacities of African countries to integrate ICP-Africa activities as routine activities.
3	Develop a time frame for national accounts production	3.1	Ensure that national accounts are produced according to a timeframe that meets national, subregional and international requirements
		3.2	Optimize and rationalize national accounts production
4	Improve capacity in the production and analysis of national accounts	4.1	Strengthen production capacities using suitable software and methodological documents
		4.2	Improve the training in SNA-2008 compliant national accounts
		4.3	Improve capacity in the analysis of national accounts
5	Improve the quality of source data necessary for compilation of National Accounts based on national strategies for the development of statistics	5.1	Develop a system of benchmark and annual socioeconomic surveys
		5.2	Develop a system of administrative sources of data
		5.3	Adopt the various international statistical systems (Balance of Payments, Government Finance Statistics, Monetary and Financial Statistics, etc) in line with the system of National Accounts
		5.4	Adapt international statistical classifications to African socio-economic realities
		5.5	Develop a framework for statistics on nonprofit institutions
		5.6	Develop a statistical system relating to development projects and programs

2.1   Promoting the strategy

A number of resolutions and recommendations were made after extensive deliberations during the three-day meeting. These resolutions and recommendations were arrived at with a view to promoting the African strategy at the international level in order to create an advantageous synergy for Africa. In this regard, the recommendations of the international conference held in Luxembourg from May 6-8, 2008 were endorsed as a reference point for leveraging a framework for developing an implementation strategy for the 2008 SNA in Africa. The organizations in attendance were expected to perform certain tasks to ensure the smooth implementation of the 2008 SNA.

The AfDB was tasked to ask African countries, other regional organizations and subregional organizations (SROs) their priorities with regard to National Accounts activities and specify possible synergies of the strategy with the ICP-Africa program. Additionally, the AfDB is expected to formalize the AGNA by informing the countries and other regional organizations and SROs about the activities of the AGNA. Among other things, the ECA was tasked to gather all methodological guidelines on the implementation of various statistical initiatives relevant to National Accounts activities. In conjunction with the ECA, the AfDB was given the role of finalizing the governance structure of the African strategy, while finalizing the matrix of the work plan allocation of tasks, and to finalize the strategy in conjunction with the SROs.

Representatives of SROs were expected to brief their respective SRO management on the progress of the strategy. The AUC was given the role of advocating for the African strategy in all countries. Other resolutions focused on the activities of AfDB, the SROs and countries on the transmission of data concerning the GDP breakdown and focal points. It was resolved that the SROs should not merely be used as data conduits from countries but should play a bigger role in the implementation of the strategy by coming up with specific National Accounts programs and harmonizing them with the various regional organizations. The timeframe of the African strategy for the implementation of the 2008 SNA was estimated at 5 years, starting in January 2009 until 2013.

Deuxième réunion du Groupe Africain sur la Comptabilité Nationale (GACN II)

Tunis, 2-4 juillet 2008

1.   PRÉAMBULE

Le Département Statistique de la Banque africaine de développement (BAD) a accueilli la deuxième réunion du Groupe Africain sur la Comptabilité Nationale (GACN) à Tunis du 2 au 4 juillet 2008. L'objectif principal de la réunion était (i) d'élaborer une stratégie africaine de mise en œuvre du Système de Comptabilité Nationale (SCN) de 1993 révisé – qui depuis récemment est appelé SCN 2008 – dans le contexte africain, (ii) faire le suivi des recommandations de la première réunion de l'AGNA qui a eu lieu à Lusaka du 7 au 11 avril 2008, (iii) revoir l'état de la soumission des séries de données (2003-2007) sur l'utilisation du Produit Intérieur Brut (PIB) par les pays africains et la décompositions des estimations du PIB pour l'année 2006 selon les 200 positions élémentaires de la nomenclature du PCI-Afrique.

Les représentants de la BAD, de la Commission Economique des Nations Unies pour l'Afrique (CEA), de la Commission de l'Union Africaine (CUA), des organisations économiques sous-régionales africaines (CEEAC, CEDEAO, COMESA et SADC) et d'AFRISTAT ont participés à la réunion et ont présenté les rapports relatifs aux différents objectifs de la réunion. Les experts africains en comptabilité nationale provenant de 10 pays africains ont été aussi invités et ont participé aux délibérations de l'atelier. Des représentants de l'Université de Johns Hopkins, de l'INSEE, de l'Office National de la statistique de Grande Bretagne, de la CEA, de la CUA, du FMI et de la Banque Mondiale ont également participé à la réunion.

2.   LA STRATÉGIE AFRICAINE

Un cadre d'axes et d'objectifs stratégiques a été proposé par la BAD et approuvé par les participants à l'atelier. Au total, cinq axes stratégiques ont été présentés, en vue d'optimiser l'élaboration des comptes nationaux sur le continent. Chaque axe stratégique est encore subdivisé en objectifs stratégiques comme montré ci-dessous.

Axes stratégiques		Objectifs stratégiques	
1	Donner à l'Afrique un SCN qui en phase avec ses spécificités socio-économiques.	1.1	Elaborer le premier système africain des comptes nationaux (SACN) dérivés du SCN 2008 révisé
		1.2	Préparer les manuels et les guides méthodologiques pour de bonnes pratiques
2	Améliorer les résultats du PCI-Afrique dans le domaine de la compta-bilité national	2.1	Accroître les capacités des pays africains d'intégrer les activités du PCI-Afrique en tant qu'activités courantes.
3	Développer un chronogramme pour la production de comptes nationaux	3.1	S'assurer que les comptes nationaux sont produits selon un chronogramme qui répond aux exigences nationales, sous-région-ales et internationales
		3.2	Optimiser et rationaliser la production de comptes nationaux
4	Améliorer la capacité dans la production et l'analyse des comptes nationaux	4.1	Renforcer les capacités de production en utilisant des logiciels et des documents méthodologiques appropriés
		4.2	Améliorer la formation sur les comptes nationaux conformément au SCN 2008
		4.3	Accroître la capacité dans l'analyse des comptes nationaux
5	Améliorer la qualité des données de base néces-saires pour l'élaboration des comptes nationaux basés sur des stratégies nationales de développe-ment de la statistique	5.1	Développer un système d'enquêtes socio-économiques de référence et annuels
		5.2	Développer un système de données de source administrative
		5.3	Adopter les divers systèmes statistiques internationaux (balance des paiements, statistiques des finances publiques, statistiques monétaires et financières, etc.) en conformité avec le système de comptabilité nationale
		5.4	Adapter les classifications statistiques internationales aux réalités socio-économiques africaines
		5.5	Développer un cadre pour les statistiques sur les institutions sans but lucratif
		5.6	Développer un système statistique concernant des projets et programmes de développement.

2.1.   Promouvoir la stratégie

Un certain nombre de résolutions et recommandations ont été faites après des discussions étendues au cours de la réunion de trois jours. Ces résolutions et recommandations ont été faites en vue de promouvoir la stratégie africaine au niveau international afin de créer une synergie avantageuse pour l'Afrique. À cet égard, les recommandations de la conférence internationale tenue au Luxembourg du 6 au 8 mai 2008 ont été endossées comme point de référence pour élaborer un cadre de développement d'une stratégie de mise en oeuvre du SCN 2008 en Afrique. Il est attendu des organismes participants d'accomplir certaines tâches pour s'assurer de la mise en oeuvre sans heurt du SCN 2008.

La BAD s'est vue octroyée la responsabilité de demander aux pays africains, à d'autres organismes régionaux et aux organismes sous-régionaux (OSR) leurs priorités en ce qui concerne les activités de comptabilité nationale et pour indiquer des synergies possibles de la stratégie avec le programme PCI-Afrique. En plus, on s'attend à ce que la BAD formalise le GACN en informant les pays et autres organismes régionaux et OSR au sujet des activités du Groupe. Entre autres, la CEA a reçu la responsabilité de recueillir tous les guides méthodologiques sur la mise en oeuvre de diverses initiatives statistiques liées aux activités de comptabilité nationale. En même temps que la CEA, la BAD a eu pour responsabilité de finaliser la structure de gouvernance de la stratégie africaine et la matrice du plan de travail et pour finaliser la stratégie en collaboration avec les OSR.

Il est attendu des représentants des OSR qu'ils rendent compte rendu à leurs autorités du progrès de la stratégie. La CUA a reçu le rôle de plaidoyer pour la stratégie africaine dans tous les pays. D'autres résolutions concernent les activités de la BAD, des OSR et des pays sur la transmission des données de la décomposition du PIB et des points focaux. Il a été souhaité que les OSR ne soient pas simplement utilisés comme des canaux de transmission de données des pays mais qu'ils jouent un plus grand rôle dans l'exécution de la stratégie en proposant des programmes spécifiques de comptabilité nationale et en les harmonisant avec les divers organismes régionaux. La durée du chronogramme de la stratégie africaine pour la mise en œuvre du SCN 2008 a été estimée à 5 ans de janvier 2009 jusqu'à fin 2013.

Third Meeting of the African Statistical Coordination Committee (ASCC)

Tunis, September 9-10, 2008

1.   PREAMBLE

The African Statistical Coordination Committee (ASCC) held its third meeting at the Sheraton Hotel in Tunis, Tunisia from September 9-10, 2008. In attendance were representatives of the African Capacity Building Foundation (ACBF), the African Development Bank (AfDB), AFRISTAT, The African Union Commission (AUC), and the United Nations Economic Commission for Africa (UNECA) as well as the Statistician General of Statistics South Africa and the Advisor to the Director General of the National Statistical Office of Niger.

The main objective of this set of meetings remains to discuss mechanisms for achieving greater synergy between regional institutions, and coordinating statistical programs and activities within the Regional Reference Strategic Framework for Statistical Capacity Building in Africa (RRSF) with a view to enhancing and sustaining the effectiveness of statistical support to African countries. Specifically, and in line with the recommendations of the first and second meetings, this meeting aimed at taking stock of

progress made by the 13 Working Groups (WGs) set up in 2007. In addition, the ASCC considered the reports on progress made by the Statistical Commission for Africa's (StatCom-Africa) five Working Groups (WGs) following a recommendation of this apex body on statistical development on the continent. Finally, it considered issues pertaining to other coordination modalities.

2.   PROCEEDINGS

2.1.   Reports on the implementation of agreed tasks

The AfDB, ACBF and ECA presented the progress made in the implementation of agreed tasks in the framework of the RRSF during the first day, while the AUC did so during the second day. The meeting noted with satisfaction the presentation of Afristat's activities in statistical development and welcomed the participation of this subregional organization in the work of the Committee. The different presentations focused on constraints faced in the implementation of the tasks, as well as on the opportunities.

2.2.   Reports on the ASCC Working Groups

RRSF Working Group
The meeting noted the report of the ECA as well as the preliminary report of the consultant on the operationalization of the RRSF. RRSF coordinators were nominated at certain levels more successfully than at other levels. While the Committee acknowledged that noticeable progress was made in the work of this WG, it was noted that a special focus shall be put on the implementation of the National Strategies for the Development of Statistics (NSDSs) in order to meet the 12 objectives of the RRSF.

The next steps for this WG include:

- Finalization of the Terms of Reference (ToRs) for the coordinators in order to ensure that the latter are nominated at all levels;
- Finalization of the reporting formats; and
- Production of the first RRSF implementation report.

National Strategies for the Development of Statistics

The ASCC reiterated that the overarching strategy to achieve the RRSF objectives is for countries to develop and implement an NSDS based on the principles developed by PARIS21 and that mainstreams sectors.

The ASCC noted the need to place an emphasis on the implementation of the NSDS rather than reporting on the design of the strategies. In this regard, the Committee recognized that funding and leadership are part of the enabling environment for a proper implementation of the NSDSs by African countries. It was also noted that reliance on donors in financing the NSDS is not sustainable. The implementation cost of NSDS can be reduced by a proper use of administrative sources of data instead of embarking on expensive surveys whose conduct is dependent on foreign financing.

The African Charter on Statistics

The AUC reported that the African Charter on Statistics will be submitted to the African Union Conference of Ministers of Justice in October 2008. Further, it will be submitted to African Union Heads of States Summit for ratification in January 2009. In addition, the AUC presented a plan for the implementation of the African Charter on Statistics, comprising committees at the regional, subregional and national levels.

The Committee noted the progress made by this WG but was concerned about the potential adverse effect of the proposed committees on the implementation of the Charter on ongoing efforts in statistical development of the continent. It noted that it was important that the reporting burden on member states is not increased by duplicating functions and reporting lines. It was felt that some of the activities of the AUC could be effectively addressed by some of the WG on the RRSF. The Charter was supposed to be used solely for advocacy purposes at the highest level possible. It was, therefore, resolved that a meeting be convened between the AUC, AfDB, ECA, South Africa and Niger to have a common understanding in the harmonization of the Charter with other existing programs and committees.

The Statistical Training Program for Africa

The ACS is finalizing a draft of the detailed proposal for the Statistical Training Program for Africa (STPA), building on the broad proposal it presented during the second coordination meeting. The key elements of the program include the support to Regional Statistical Training Centers (STCs); the establishment/support for In-Service Training Centers, and an Induction–Tutorage–Mentoring Facility.

The WG also established a Task Team on Statistical Training and Human Resources as the StatCom-Africa WG on Training. Moreover, it is undergoing discussions with the Universities of Massey (New Zealand) and Reading (UK) for the preparation of an e-Book on official statistics in Africa.

The ACBF reported on the work being done in preparation for a capacity building program for the STCs. Two consultants have been hired and their reports were disseminated in Abidjan on July 24-25, 2008. All the institutions invited attended except ECAs which sent a note. The revised reports of consultants are awaited for the preparation of the ACBF assessment report to be submitted for approval by the ACBF Board in November/early December 2008. This is a holistic approach to capacity building and support to the STCs, even though the emphasis is at the Master's training level. A consensus emerged from the discussions that the focus should be more on capacity building than training alone, to include also lower-level statisticians.

Moreover, the need for an innovative approach to capacity building, and the need for the establishment of center of excellence that will attract African and non African statisticians on topical programs, has been reemphasized for the sustainability of these institutions. The ACBF is coordinating this work on behalf of the ASCC, and the financing/monitoring of the program will be done by several donors, including ACBF, AfDB, ECA, French Cooperation, etc. The Statistical Training Program for Africa (STPA) proposal should relate to what ACBF has been doing.

The ASCC noted that training in statistics should not be concentrated on professional statisticians. In fact, training should target people at lower levels who are in charge of day–to–day administrative issues at the various levels, i.e. central and local Government levels. Thus in-service training programs should be encouraged to train staff not just in the National Statistical Offices (NSOs) but also in all the line ministries and covering the entire National Statistical System (NSS).

Support to fragile states

The support to fragile states should be looked at broadly including a risk management aspect. It is possible that a well-functioning state can become fragile within a relatively short period of time. The idea is to put in place mechanisms not only for the support of current fragile states but also those states that are at risk of becoming fragile.

The next steps of this WG include the preparation of a concept note.

International Comparison Program for Africa
The ASCC noted that the dissemination of the 2005 ICP results was not packaged properly. There is need to adopt a more effective dissemination strategy especially towards high-level decisionmakers and politicians. The Committee expressed some concerns about the downsizing of the list of items and coverage for the next round of ICP. This runs the risk of sending a bad signal with respect to this successful exercise, which Africa is trying to sell to decisionmakers.

Measuring and fostering progress of societies
The Committee was concerned about embracing another set of measurements of progress of African societies while African countries are struggling to properly measure the said progress using the existing, although limited, set of measurement tools such as Gross Domestic Product (GDP) and the set of MDGs. The committee nevertheless noted that it is worth having some African representatives in ongoing discussions by the OECD on measuring the progress of societies. The AfDB under its 2020-2050 project might consider engaging in discussions in this regard.

Statistical Associations
The Committee noted with satisfaction the effort by the ECA to revive National Statistical Associations (NSAs) as building blocks for the African Statistical Association (ASA). In this regard, 18 NSAs were identified and invited to attend the StatCom-Africa meeting in January 2008. Moreover, informal meetings have been held with NSAs on the possibility of organizing a special workshop for leaders of these societies/associations.

While commending the WG for progress made in this regard, the ASCC noted that the WG would benefit from the ACBF report on NSAs.

The African Statistical Coordination Committee
This WG on the ASCC was tasked with preparing the ToRs of the ASCC. The proposed ToRs were presented by the AfDB and endorsed by the ASCC.

The African Statistical Award Program
There was no report on the African Statistical Award Program as the WG did not undertake any activity.

Joint African statistical databases and publications
The WG on joint statistical databases and publications reported that the databases component is a long-term project and as such could not be dealt with during this meeting. In terms of the *African Statistical Yearbook* (ASYB), the WG is working toward producing one for the year 2009.

The next steps of this WG include:

- Preparation of a timetable for the production of the first Joint ASYB;
- Production of the ASYB by March 2009.

Consolidated African statistical program
Due to the delay in the recruitment of the consultants, the proposal for a Consolidated African Statistical Program was not presented.

The next step for this WG is to prepare a report to the ASCC based on the consultant's report.

Preparations for the International Statistical Institute
Preparations for the 2009 ISI session in Durban have reached an advanced stage and no problems are foreseen in the successful hosting of the meeting. The South African Statistician General called upon the ASCC to consider this event as an African initiative and to mobilize Africans to contribute substantively to its success.

The ASCC noted with satisfaction the progress made and insisted that the contribution be in terms of massive attendance and scientific contribution to the event. In this regard, it was resolved that the WG put in place a selection process based on the potential contribution to the event in order to select at least three representatives per African country to attend the ISI meeting in Durban in 2009.

The next steps for this WG include:

- Propose a selection procedure for representatives of African countries;
- A plan for the mobilization of resources to meet the attendance cost of the successful candidates.

2.3. StatCom-Africa Working Groups

Gender Statistics

The Committee welcomed the progress made by this WG based on the presentation made by the ECA. The WG organized the High Level Dialogue on Gender Statistics in Kampala in June 2008. It is finalizing a detailed regional program on gender statistics and is involved in the preparation of the Global Forum on Gender Statistics to be held in Accra, Ghana, in November 2008.

The next steps for this WG include:

- Finalization of the detailed regional program on gender statistics;
- Contribution to the organization of the Global Forum on Gender Statistics to be held in Ghana in November 2008.

Statistical Training

The report by the ECA mentioned that a detailed proposal for the STPA is being finalized. It includes three components, namely support to Regional Statistical Training Centers (STCs); establishment/support for In-Service Training Centers, and Induction–Tutorage–Mentoring Facility.

The next steps of the WG include:

- Finalization of the draft proposal.

Development Indicators

The WG on development indicators has made noticeable progress according to the report by the ECA. It first organized a workshop on data gaps and discrepancies between national and international data sources on the Millennium Development Goals (MDGs) indicators in May 2008. In addition, it has undertaken an in-depth analysis of potential sources of discrepancies and data gaps using two pilot countries: Ethiopia and Uganda. The WG is preparing a report to be submitted to the Inter Agency and Expert Group (IAEG) on MDG Indicators in October 2008. The WG has also finalized ToRs and set up a forum to ensure exchange of information between members.

The next steps of the WG include:

- Finalizing the report to be submitted to the IAEG; and

- Devising a detailed plan to address issues of data gaps and discrepancies building on the recommendations of the report.

National Accounts

The AfDB organized two meetings of the African Group on National Accounts (AGNA) so far in Lusaka in April and Tunis in July 2008. In addition, the WG undertook different activities toward designing a strategy and an action plan for the revised 2008 SNA implementation in African countries, comprising five strategic lines with a view to optimizing the compilation of National Accounts on the continent. The timeframe of the African strategy for the implementation of the 2008 SNA is estimated at 5 years starting in January 2009 until 2013.

The next steps of the WG include:

- Formalizing the AGNA by informing the countries and other regional organizations and SROs about the activities of the AGNA;
- Gathering all methodological guidelines on the implementation of various statistical initiatives relevant to National Accounts activities;
- Finalizing the governance structure of the African strategy and the matrix of the work plan allocation of tasks and finalize the strategy in close consultation with subregional organizations.

Measurement of the Informal Sector

Although this WG did not undertake any activity as such, it is building on an existing wealth of material developed by the leading institution, AFRISTAT. This is the rationale behind StatCom-Africa giving the leadership of the WG to this institution. AFRISTAT is organizing from October 22-24, 2008 in Bamako within the framework of its ongoing activities and in line with the StatCom-Africa mandate, an International Seminar on the Informal Sector. African NSOs as well as policymakers and researchers from international organizations are expected to attend the seminar.

The next steps of the WG include:

- Organizing the seminar;
- Publishing the outcomes of the seminar;
- Exchange of information among African stakeholders;
- Mobilizing resources to fund meetings of the WG;
- Regular evaluation of the work in the area.

2.4. New Working Groups

The meeting recommended the creation of two WGs: price statistics and financial statistics. The price statistics WG is expected to work out modalities of the development of a Harmonized Consumer Price Index for some African Regional Economic Communities (RECs), building on the Afristat work for its member states and the ECA preliminary work on SADC countries. The ECA will lead this WG.

The meeting resolved to create a WG on financial statistics, following a presentation made by the AfDB on its African Financial Markets Initiative (AFMI). The implementation of the latter requires data collection and management, standardization of methodology, and development of financial indicators. The WG will be led by the AfDB.

3. OTHER COORDINATION ISSUES

The meeting noted the need for a systematic way of presenting the reports to the ASCC. In this regard, various WGs are required to prepare their progress reports following a logical framework that has to be developed and made available by the ASCC WG. It was also agreed that the reports shall take into account ongoing efforts in different areas covered by the issues under consideration.

Troisième réunion du Comité africain de coordination statistique (CACS)

Tunis, 9-10 septembre 2008

1. PRÉAMBULE

Le Comité africain de coordination statistique (CACS) a tenu sa troisième réunion à l'hôtel Sheraton à Tunis, en Tunisie, du 9 au 10 septembre 2008. Y ont participé les représentants de la Fondation africaine de renforcement des capacités (ACBF), de la Banque africaine de développement (BAD), d'AFRISTAT, de la Commission de l'Union Africaine (CUA), et de la Commission économique des Nations Unies pour l'Afrique (UNECA) ainsi que le Statisticien général d'Afrique du Sud et le conseiller du Directeur général de l'Institut national de la statistique du Niger.

Les réunions du CACS visent principalement à discuter des mécanismes susceptibles de garantir une plus grande synergie entre les institutions régionales et les programmes et activités de coordination statistique dans le cadre stratégique régional de référence pour le renforcement des capacités statistiques en Afrique (CSRR) en vue d'accroître et de pérenniser l'efficacité de l'appui statistique aux pays africains. De façon spécifique et conformément aux recommandations des première et deuxième réunions, cette réunion visait à examiner les progrès accomplis par les 13 groupes de travail (GT) établis en 2007. En outre, le CACS a examiné les rapports des progrès réalisés par les 5 groupes de travail de la Commission statistique pour l'Afrique (StatCom-Afrique) établis selon une recommandation de cette instance majeure de développement statistique sur le continent. En

définitive, le comité a traité des questions relatives à d'autres modalités de coordination.

2. RELEVÉ DES DISCUSSIONS

2.1. Rapports sur la mise en oeuvre des décisions précédentes

La BAD, l'ACBF et la CEA ont présenté l'état d'avancement de la mise en oeuvre des décisions des réunions précédentes prises dans le cadre du CSRR lors de la première journée, tandis que la CUA l'a fait le deuxième jour. La réunion a noté avec satisfaction la présentation des activités de développement statistique d'Afristat et la participation de cette organisation sous-régionale au travail du Comité. Les différentes présentations se sont focalisées sur les contraintes et opportunités liées à la mise en oeuvre de ces décisions.

2.2. Rapports des groupes de travail du CACS

Groupe de travail sur le CSRR
La réunion a pris connaissance du rapport de la CEA ainsi que du rapport préliminaire du consultant sur l'opérationnalisation du CSRR. Des coordonnateurs du CSRR ont été nommés à certains niveaux avec plus de succès qu'à d'autres niveaux. Tandis que le Comité reconnaissait que des progrès notables ont été accomplis dans le travail de ce GT, il a été relevé qu'un accent spécial devra être mis sur la mise en oeuvre des stratégies nationales de développement statistique (SNDS) afin de répondre aux 12 objectifs du CSRR.

Les prochaines étapes pour ce GT incluent :

- La finalisation des termes de référence (TdRs) des coordonnateurs en vue de leur nomination à tous les niveaux;
- La finalisation des formulaires de présentation des rapports; et
- La production du premier rapport de mise en oeuvre du CSRR.

Stratégies nationales de développement statistique
Le CACS a réitéré que la stratégie primordiale d'atteinte des objectifs du CSRR consiste, pour les pays, à développer et mettre en oeuvre une SNDS selon les principes développés par PARIS21 en intégrant les secteurs.

Le CACS a noté le besoin de mettre l'accent sur la mise en oeuvre des SNDS plutôt que de présenter des rapports sur la conception des stratégies. À cet égard, le Comité a reconnu que le financement et le leadership font partie des conditions favorables à une mise en oeuvre appropriée des SNDS par les pays africains. On a également noté que le fait de compter sur les donateurs dans le financement des SNDS n'est pas soutenable. Le coût de mise en oeuvre des SNDS peut être réduit par une utilisation appropriée des sources administratives de données au lieu de s'embarquer dans des enquêtes onéreuses dont la réalisation dépend de financements extérieurs.

La charte africaine de statistique

La CUA a informé la réunion que la charte africaine de statistique sera soumise à la conférence des Ministres de la Justice de l'Union africaine en octobre 2008. De plus, elle sera soumise au sommet des chefs d'Etat de l'Union africaine pour ratification en janvier 2009. En outre, la CUA a présenté un plan de mise en oeuvre de la charte africaine de statistique comportant des comités au régional et aux niveaux sous-régionaux et nationaux.

Le Comité a noté le progrès accompli par ce GT mais s'est montré préoccupé par l'effet défavorable potentiel des comités proposés pour la mise en oeuvre de la charte sur les efforts de développement statistique du continent en cours. Il a indiqué qu'il était important que la charge de travail de remplissage de questionnaires par les Etats membres ne soit pas augmentée par une multiplication des fonctions et des lignes d'information. La réunion a estimé que certaines activités de la CUA pouvaient être effectivement traitées par certains GT du CSRR. La charte est censée servir au plaidoyer de haut niveau seulement. Il a été décidé en définitive qu'une session regroupant la CUA, la BAD, la CEA, l'Afrique du Sud et le Niger soit convoquée pour dégager une compréhension commune de l'harmonisation de la charte avec d'autres programmes et comités existants.

Le programme de formation statistique pour l'Afrique

Le CAS est en train de finaliser un projet de proposition détaillée de programme de formation statistique pour l'Afrique (PFSA) s'appuyant sur la proposition générale qu'il avait présentée au cours de la deuxième réunion de coordination. Parmi les éléments clefs du programme figurent l'appui aux centres de formation statistique régionaux (CFS); l'établissement ou le soutien aux centres de formation en cours d'emploi, et un service d'accueil et d'orientation, et d'encadrement.

Le GT a également établi une équipe de travail sur la formation statistique et les ressources humaines en tant que GT de StatCom-Afrique sur la formation. De plus, des discussions sont engagées avec les universités de Massey (Nouvelle Zélande) et Reading (Royaume-Uni) pour la préparation d'un livre électronique sur les statistiques officielles en Afrique.

L'ACBF a présenté un rapport sur le travail en cours en vue d'un programme de renforcement des capacités pour les CFS. Deux consultants ont été engagés dont les rapports ont été diffusés à Abidjan les 24 et 25 juillet 2008. Toutes les institutions invitées y avaient participé, à l'exception de la CEA qui avait envoyé une contribution écrite. Les rapports révisés des consultants sont attendus pour la préparation du rapport d'évaluation de l'ACBF à soumettre pour approbation au Conseil d'Administration de l'ACBF en novembre ou début décembre 2008. C'est une approche holistique de renforcement des capacités et d'appui aux CFS, quoique l'accent soit mis au niveau de la maîtrise. Il est ressorti des discussions que l'accent devrait être mis davantage sur le renforcement des capacités que sur la seule formation pour inclure également des statisticiens de niveaux inférieurs.

D'ailleurs, la nécessité d'une approche innovante pour le renforcement des capacités et le besoin de mettre en place des centres d'excellence qui attireront des statisticiens africains et non africains sur des programmes d'actualité a été soulignée à nouveau dans un souci de pérennité de ces établissements. L'ACBF coordonne ce travail au nom du CACS, et le financement et suivi du programme seront assurés par plusieurs donateurs, au nombre desquels l'ACBF, la BAD, la CEA et la coopération française, etc. La proposition de programme de formation statistique pour l'Afrique (PFSA) devrait se rapporter à ce que l'ACBF était en train de faire.

Le CACS a noté que la formation statistique ne devrait pas être concentrée sur les statisticiens professionnels. En fait, la formation devrait viser des personnes des niveaux inférieurs qui sont chargées des problèmes administratifs quotidiens aux divers niveaux des administrations centrale et locales. Ainsi, des programmes de formation en cours d'emploi devraient être encouragés pour former le personnel non seulement dans les instituts nationaux de statistique (INS) mais également dans tous les ministères sectoriels, de manière à couvrir l'ensemble du système statistique national (SSN).

Appui aux états fragiles

L'appui aux états fragiles devrait être examiné dans un sens large intégrant un aspect de gestion des risques. Il est possible qu'un état réputé stable se

fragilise dans une période relativement courte. L'idée consiste à mettre en place des mécanismes non seulement pour l'appui aux états fragiles actuels mais également aux états susceptibles de le devenir.

Au nombre des prochaines étapes de ce GT figure la préparation d'une note conceptuelle.

Programme de comparaison internationale pour l'Afrique

Le CACS a noté que la diffusion des résultats du PCI 2005 n'a pas été organisée correctement. Il y a lieu d'adopter une stratégie plus efficace de diffusion particulièrement vers les décideurs et les responsables politiques de haut niveau. Le Comité a exprimé quelques inquiétudes concernant la réduction de la liste des produits et de la couverture de la prochaine phase du PCI. Ceci risque d'envoyer un signal négatif quant à l'exercice réussi que l'Afrique essaye de vendre aux décideurs.

Mesure et promotion du progrès des sociétés

Le Comité a manifesté sa préoccupation quant au fait de recourir à un autre ensemble de mesures du progrès des sociétés africaines tandis que les pays africains luttent encore à mesurer correctement ledit progrès en utilisant les instruments de mesures existants bien que limités, à savoir le produit intérieur brut (PIB) et l'ensemble des OMD. Il a néanmoins noté qu'il convient d'avoir quelques représentants africains dans les discussions en cours conduites par l'OCDE sur la mesure du progrès des sociétés. La BAD pourrait s'y engager dans le cadre de son projet de vision 2020-2050.

Associations statistiques

Le Comité a noté avec satisfaction les efforts entrepris par la CEA de rétablir les associations statistiques nationales (ASN) en tant que composantes de l'association statistique africaine (ASA). À cet égard, 18 ASN ont été identifiées et invitées à assister à la réunion de StatCom-Afrique en janvier 2008. De plus, une réunion informelle a eu lieu avec les ASN pour discuter de la possibilité d'organiser un séminaire spécial des responsables de ces sociétés et associations.

Tout en félicitant le GT pour les progrès accomplis à cet égard, le CACS a noté que le GT profiterait du rapport de l'ACBF sur les ASN.

Le Comité de coordination statistique africain

Ce GT sur le CACS a été chargé de préparer les termes de référence du CACS, lesquels ont été présentés par la BAD et approuvés par le CACS.

Le programme de prix statistique africain

Il n'y a pas eu de rapport sur le programme de prix statistique africain car ce GT n'a entrepris aucune activité.

Bases de données et publications statistiques africaines communes

Le GT sur les bases de données et les publications statistiques communes est un projet à long terme et comme tel, il ne pouvait pas être entendu au cours de la réunion. En ce qui concerne l'annuaire statistique africain (ANSA), le GT est à pied d'oeuvre pour la production d'un annuaire pour l'année 2009.

Les prochaines étapes de ce GT comprennent :

• La préparation d'un calendrier de production du premier ANSA conjoint;
• La production de l'ANSA pour mars 2009.

Programme statistique africain consolidé

En raison du retard dans le recrutement des consultants, la proposition de programme statistique africain consolidé n'a pas été présentée.

La prochaine étape pour ce GT est de préparer un rapport au CACS basé sur le rapport du consultant.

Préparations pour l'institut international de statistique

Les préparations pour la session de 2009 de l'IIS à Durban ont atteint une étape avancée et aucun problème n'est pressenti quant à l'accueil réussi de la réunion. Le statisticien général sud-africain a invité le CACS à considérer cet événement comme africain et à mobiliser les Africains pour qu'ils contribuent de façon significative à son succès.

Le CACS a noté avec satisfaction les progrès accomplis et a insisté sur le fait que la contribution se fasse sous la forme d'une participation massive et de contributions scientifiques à l'événement. À cet égard, il a été décidé que le GT mette en place un processus de sélection basé sur la contribution potentielle à l'événement afin de choisir au moins trois représentants par pays africain qui assisteraient à la session de l'IIS à Durban en 2009.

Les prochaines étapes pour ce GT comprennent :

• La proposition d'une procédure de sélection des représentants des pays africains;

• Un plan de mobilisation des ressources pour faire face aux coûts de participation des candidats retenus.

2.3.   Groupes de travail de la StatCom-Afrique

Statistiques de genre

Le Comité s'est félicité des progrès accomplis par ce GT tels que rapportés par la CEA. Le GT a organisé un dialogue de haut niveau sur les statistiques de genre à Kampala en juin 2008. Il finalise la préparation d'un programme régional détaillé sur les statistiques de genre et est impliqué dans la préparation du forum mondial sur les statistiques de genre prévu à Accra, Ghana, en novembre 2008.

Les prochaines étapes pour ce GT incluent :

• La finalisation du programme régional détaillé sur les statistiques de genre;
• Contribution à l'organisation du forum mondial sur les statistiques de genre prévu au Ghana en novembre 2008.

Formation statistique

Le rapport de la CEA a mentionné qu'une proposition détaillée du PFSA est menée à bonne fin. Il comprend trois composantes à savoir l'appui aux centres de formation statistiques régionaux (CFS); le soutien des centres de formation en cours d'emploi, et les dispositions d'accueil et d'orientation, et d'encadrement.

La prochaine étape du GT consiste :

• A finaliser le projet de proposition.

Indicateurs de développement

Le GT sur les indicateurs de développement a réalisé des progrès appréciables selon le rapport de la CEA. Il a d'abord organisé, en mai 2008, un atelier sur les lacunes et les divergences des données entre les sources nationales et internationales sur les indicateurs des Objectifs du Millénium pour le Développement (OMD). En outre il a entrepris une analyse détaillée des sources potentielles des anomalies et des lacunes de données sur deux pays pilotes : l'Ethiopie et l'Ouganda. Le GT prépare un rapport destiné au groupe d'experts inter-agences (IAEG) sur les indicateurs OMD en octobre 2008. Le GT a également élaboré des termes de référence et mis en place un forum d'échange d'informations entre les membres.

Les prochaines étapes du GT incluent :

- La finalisation du rapport à soumettre à l'IAEG; et
- La conception d'un plan détaillé visant à aborder les problèmes des lacunes et des divergences des données suivant les recommandations du rapport.

Comptes nationaux

La BAD a organisé jusque là deux réunions du groupe africain sur la comptabilité nationale (GACN) : à Lusaka en avril et à Tunis en juillet 2008. En outre, le GT a entrepris différentes activités visant à concevoir une stratégie et un plan d'actions pour la mise en œuvre du SCN-2008 (révisé) dans les pays africains comportant cinq axes stratégiques en vue d'optimiser l'élaboration des comptes nationaux sur le continent. Le calendrier de la stratégie africaine de mise en œuvre du SCN-2008 porte sur 5 ans de janvier 2009 à 2013.

Les prochaines étapes du GT incluent :

- La formalisation du GACN en informant les pays et les autres organisations régionales et sous-régionales sur les activités du GACN;
- L'inventaire de toutes les directives méthodologiques sur la mise en œuvre de diverses initiatives statistiques concernant les activités de comptabilité nationale;
- La finalisation de la structure de gouvernance de la stratégie africaine et la matrice de la répartition du plan d'actions et celle de la stratégie en étroite consultation avec les organisations sous-régionales.

Mesure du secteur informel

Bien que ce GT n'ait entrepris aucune activité en soi, il s'appuie sur une abondante documentation déjà existante au niveau de l'institution chef de file de ce GT, AFRISTAT. Ceci est la raison pour laquelle StatCom-Afrique a confié la conduite du GT à cette institution. AFRISTAT organise du 22 au 24 octobre 2008 à Bamako, dans le cadre de ses activités en cours et en conformité avec le mandat de StatCom-Afrique, un séminaire international sur le secteur informel. Il est prévu que les INS africains ainsi que les décideurs et les chercheurs des organismes internationaux participent au séminaire.

Les prochaines étapes du GT incluent :

- Organisation du séminaire;

- Publication des résultats du séminaire;
- Échange d'informations entre les parties prenantes africaines;
- Mobilisation des ressources pour le financement des réunions du GT; et
- Évaluation régulière du travail dans ce domaine.

2.4.   Nouveaux groupes de travail

La réunion a recommandé la création de deux GT : Statistiques des prix et statistiques financières. Le GT sur les statistiques des prix est appelé à élaborer les modalités de développement d'un indice harmonisé des prix à la consommation destiné à quelques communautés économiques régionales africaines (CER) en s'appuyant sur le travail entrepris par Afristat pour ses Etats membres et le travail préliminaire de la CEA pour les pays de la SADC. La CEA présidera ce GT.

La réunion a décidé de créer un GT sur les statistiques financières suivant une présentation faite par la BAD sur son initiative sur les marchés financiers africains (AFMI). La mise en oeuvre de cette initiative requiert la collecte et la gestion de données, l'harmonisation méthodologique et le développement d'indicateurs financiers. Le GT sera présidé par la BAD.

3.   AUTRES PROBLÈMES DE COORDINATION

La réunion a noté le besoin de systématisation de la présentation des rapports au CACS. À cet égard, les divers GT devraient préparer leurs rapports sur l'état d'avancement de leurs travaux suivant un cadre logique restant à développer et devant être mis à disposition par le GT CACS. Il est convenu que les rapports tiennent compte des efforts en cours dans les différents domaines couverts par les thèmes des GT.

Participants to the 12th session of the Committee for the Coordination of Statistical Activities (CCSA), Tunis, September 11-12, 2008.
12ème session du Comité pour la coordination des activités statistiques (CCAS), Tunis, 11-12 septembre 2008

Upcoming Events / Evénements en vue

Date	Venue / Lieu	Title / Titre	Organizers / Organisateurs
NOVEMBER / NOVEMBRE 2008			
24/11 – 5/12	Geneva, Switzerland	18th International Conference of Labor Statisticians / 18e conference des statisticiens du travail	ILO
DECEMBER / DECEMBRE 2008			
1-3	Tunis, Tunisia	Workshop on regional statistical capacity building strategies and statistical cooperation between Maghreb countries / Atelier sur les stratégies régionales de renforcement des capacités statistiques et de la coopération statistique entre les pays maghrébins	PARIS21 / ONS
15 – 16	Ababa, Ethiopia	Workshop on Gender Statistics / Atelier régional sur les statistiques sexospécifiques	UNECA / InWent / AfDB / ACBF
17-19	Ababa, Ethiopia	Regional Workshop on NSDS / Atelier régional sur les SNDS	UNECA / InWent / AfDB / ACBF/ PARIS21
FEBRUARY/ FEVRIER 2009			
16-20	Luanda, Angola	4th Africa Symposium for Statistical Development / 4e symposium africain pour le développement de la statistique	ASSD Secretariat
24-27	New York, USA	40th Session of the UN Statistical Commission / 40e session de la Commission statistique des Nations Unies	UNSD
AUGUST 2009			
16-22	Durban, South Africa	57th Biennial Session - International Statistical Institute / 57e session biennale de l'Institut International de Statistique	Stat SA / ISI
OCTOBER 2009			
27-30	Busan, Korea	3rd OECD World Forum on Statistics, Knowledge and Policy / 3e Forum mondial de l'OCDE sur la statistique, la connaissance et la politique	OECD

57th Session of the International Statistical Institute

Durban, South Africa, August 16-22, 2009

Foreword

From the land alive with possibilities, and the home of the Rainbow Nation, I extend a warm invitation to join South Africa as we host the 57th Session of the International Statistical Institute (ISI) to be held in Durban, South Africa, from August 16-22, 2009.

In 2003, South Africa, mandated by Cabinet, was successful in a bid to host the 57th Session of the ISI. We share this success and privilege with the entire African continent and the African statistics community as a historic milestone in our journey of statistical development.

The 57th Session will provide a forum for us to evaluate where we are as a global community in seeking to achieve more equitable societies for all. These discussions will be defined by the theme of the session, ***"Statistics: Our Past, Present & Future"***.

On the eve of the 2010 Soccer World Cup, also hosted by South Africa, the session will set the pace and agenda for detailed debates and discussions. It will also feature an exciting "Proudly South African" social program and opportunities to learn about life in this diverse country.

Pali Lehohla
Statistician-General
Head: Statistics South Africa

About the International Statistical Institute

Established in 1885, the International Statistical Institute (ISI) is one of the oldest scientific associations operating in the modern world. Its success can be attributed to the worldwide demand for professional statistical information, its leadership in the development of statistical methods and their application, and in the collective dedication of its members.

Its influence can be seen in the improvements in information and analysis throughout the economic, social, biological and industrial sectors. Its

industrial influence is evidenced in advanced statistical practices, resulting in improved quality assurance. The ISI is also proud of its continuing support of statistical progress in the developing world.

The Institute's activities are funded by grants from intergovernmental organizations, governments, local authorities, foundations, private businesses and others. The ISI is composed of more than 2,000 elected members who are internationally recognized as the definitive leaders in the field of statistics. Its membership crosses all borders, and is drawn from over 130 countries.

This reservoir of expertise is supplemented by approximately 3,000 additional individual members of the Institute's specialized sections:

- Bernoulli Society for Mathematical Statistics and Probability (BS)
- International Association for Statistical Computing (IASC)
- International Association for Official Statistics (IAOS)
- International Association of Survey Statisticians (IASS)
- International Association for Statistics Education (IASE)
- International Society for Business and Industrial Statistics (ISBIS)
- Irving Fisher Committee on Central Bank Statistics (IFC)
- The International Environmetrics Society (TIES)

The ISI publishes a variety of professional books, journals, newsletters and reports, representing the cutting edge in the development of contemporary statistical knowledge.

Its permanent office is situated in The Hague, Netherlands, where it is incorporated. The Institute has consultative status with the United Nations Economic and Social Council (ECOSOC) and the United Nations Educational, Scientific and Cultural Organisation (UNESCO).

The ISI is especially renowned for its biennial meetings in which the entire membership congregates to exchange ideas, develop new links, and discuss current trends and developments in the statistical world.

Scientific Program for the 57th Session of the ISI

The ISI Scientific Program comprises four components:

Invited Paper Meetings (IPMs)
These meetings are largely finalized. For further information including the organizers of these meetings together with their contact details please see visit the ISI 2009 website at: www.statssa.gov.za/isi2009.

Special Topic Contributed Paper Meetings (STCPMs): Each STCPM will be allocated a slot of two-and-a-quarter hours. The meeting may follow a standard format, but can also be flexible. An organizer may want to include a number of short presentations, or fewer more substantial papers, or may prefer to organize a panel discussion. There are still opportunities to organize an STCPM on a particular topic or aspect of statistics. We welcome innovation and look forward to your contributions! If you would like to discuss your ideas please contact Professor Tim Dunne, Chair, Local Programme Committee, by e-mail at: tim.dunne@uct.ac.za

Contributed Paper Meetings (CPMs): Contributors have until **13th April 2009** to submit or revise an abstract on any topic within the broad fields of statistical theory, methods, application or education. Contributed paper authors are normally offered 15 minutes for their presentation. We will attempt to group contributed papers together according to their content. This process will be assisted if each contributor can select one or more of the categories offered on the registration form which best suit the paper. We will aim to include as many of the contributed papers as possible.

Posters: An alternative to offering a contributed paper is to submit an abstract for a poster. Each accepted poster will be allocated display space and a day for exhibition. A time slot will be allocated at which contributors can elaborate on the topic and answer questions. The best posters will be awarded prizes. Contributions through the medium of posters from young statisticians and students are particularly welcome.

All submissions require that the author is present at the ISI. Papers will be accepted in principle so that authors can seek relevant support to attend the ISI meeting. However, registration and payment of registration fees by **15 June 2009** are required for confirmation as part of the program.

IPM Scientific Papers
1   President's Invited Paper Meeting
2   Frontiers of Machine Learning
3   Inference under Qualitative Restrictions
4   Semi- and Nonparametric Statistics
5   Model Building and Regularization

6   Stochastic Geometry with Applications
7   Concentration Inequalities
8   Random Dynamical Systems
9   Statistical Modelling and Data Analysis for Neural Coding
10   The Role of Chance in Evolution
11   Stochastics in Neurophysiology
12   Statistics in Biodiversity
13   Stochastics of Genome
14   Complex Data Analysis, Dimension Reduction and Sparsity
15   The Challenge of Building a Supply of Statisticians for the Future
16   Comparing Poverty and Prices across National Boundaries - the ICP and Poverty PPPs
17   Implementing the 1993 System of National Accounts
18   Sustainable Development Indicators - New Challenges
19   Globalisation and Official Statistics - how to ensure International Comparability, while retaining National Relevance
20   Bringing Stats Home: Role of Official Statistical Offices in supporting Comparable Statistics at Regional, Urban and Local Level
21   Improving Comparability of Urban and Regional Data: Standards, Harmonization, and sharing Metadata Resources for Survey Development
22   Methodological and Measurement Challenges in Economic Statistics
23   Contemporary Methodological Challenges in Social Statistics
24   Quality Control and Assurance of Administrative Data used in Statistics Production
25   Measuring Price Statistics: A National Conspiracy of Numbers?
26   Functional Data Analysis: Theory and Applications
27   Uncertainty in Statistical Matching
28   Statistics and the Internet for Development in e-Education, e-Health and other fields with particular reference to Africa
29   Statistical Methods for Non-Linear Latent Variable Models
30   Statistical Online Monitoring
31   Statistical and Computational Challenges from New Environmental Sensing Systems
32   Sensometrics and Chemometrics in Food Industry
33   Statistical Modelling of Multimedia Content
34   Measures of Effectiveness for Distributed Systems
35   Spatial Statistics: Recent Advances in Epidemiological Applications
36   Random Projection for Multimedia Retrieval
37   The Roles of Statistical Agencies in Developing Statistical Literacy
38   Educating the Public on how to use Official Statistics

Short Courses

A number of short courses will be organized prior to ISI 2009. One of these courses, for which information is currently available, is that of the **International Association of Survey Statisticians (IASS).**

Seven selected short courses will be offered over two two-day sessions. The preliminary schedule of IASS Short Courses for the ISI 2009 meetings is as follows:

IASS Session 1: August 12-13, 2009	
Session/Course	Volunteer Instructors
Editing and Imputation	John Kovar, Eric Rancourt
Business Survey Design	Wesley Yung, Michael Hidiroglou
Sample Design	Colm O'Muircheartaigh, Steve Heeringa
IASS Session 2: August 14-15, 2009	
Survey Quality	Paul Biemer
Seasonal Adjustment of Data	Craig McClaren, Dominique Ladiray, Benoit Quenneville
Analysis of Complex Sample Data	Jay Breidt, Wayne Fuller, Kirk Wolter
Small Area Estimation	Jon Rao, Isabel Molina

Steve Heeringa, IASS Scientific Secretary, will be coordinating this activity, in close liaison with the local hosts in South Africa. Should you have any questions or concerns about the 2009 IASS short courses, please do not hesitate to contact Steve Heeringa directly by email on sheering@isr.umich.edu

More information on other short courses will be posted on the ISI website as and when this becomes available.

Satellite Meetings

Several satellite meetings will be held before and after the 57th Session of the ISI. These meetings will be held both in Durban and in some of the other provinces in South Africa. There follows some information on the International Society for Business and Industrial Statistics (ISBIS) satellite meeting. Additional information on other satellite meetings will follow in the next bulletin.

International Society for Business and Industrial Statistics (ISBIS) Satellite Meeting

The "Stellenbosch Statistical Symposium 2009", the satellite meeting of the International Society for Business and Industrial Statistics (ISBIS), will take place from August 24-26, 2009 at the Wallenberg Conference facility in Stellenbosch in the Western Cape. This meeting will be hosted by the Department of Statistics and Actuarial Science at Stellenbosch University.

The Stellenbosch Statistical Symposium is co-hosted by the International Society for Business and Industrial Statistics and will focus on quantitative aspects of the banking, insurance, manufacturing and engineering industries of South Africa and abroad. The emphasis will be on important statistical issues relating to productivity improvement and decision-making at all levels of business and industry.

Leading quantitative business analysts and industrial statisticians will participate and the organizers hope to attract a significant number of delegates from South African business and industry.

The symposium will be held in the spectacular university town of Stellenbosch, which is in the heartland of the South African wine industry.

Conference Program

ISI Sessions include both scientific and administrative meetings. Provision is made for meetings of the ISI Executive, Executives of the sections and committees, as well as the General Assembly of the ISI. Apart from the opening and closing ceremonies, the President's Invited Paper Session is the only plenary session. Up to 20 parallel sessions for each Scientific Paper slot are anticipated. The preliminary program for August 16-22 is as follows:

Time	Sunday 16 Aug	Monday 17 Aug	Tuesday 18 Aug	Wednesday 19 Aug	Thursday 20 Aug	Friday 21 Aug	Saturday 22 Aug
07.30-09.00		Admin meetings	Admin meetings	(08.30-10.45) Scientific papers	Admin meetings	Admin meetings	Admin meetings
09.00-11.15	Registra-tion	Scientific papers	Scientific papers		Scientific papers	Scientific papers	Scientific papers
				(10.45-13.00) Scientific papers			
11.15-13.00		Admin meetings	Admin meetings		Admin meetings	Admin meetings	Admin meetings
13.00-15.15		Scientific papers	Scientific papers	Free time for excursions	Scientific papers	Scientific papers	Scientific papers
15.15-17.30	(16.30) Opening Ceremony followed by cocktail	Scientific papers	Scientific papers		General Assembly	Scientific papers	Closing ceremony
			Beach Party		Women in Statistics Dinner (by invitation only)	Statisti-cian-Gen-eral's VIP Dinner (by invitation only)	Gala din-ner

The Social Program will be a highlight of the 57th Session of the ISI and is designed to provide participants with an opportunity to relax and experience a taste of South African cuisine, culture and hospitality, and to maximize networking opportunities.

Registration

Registration for ISI 2009 is now open via the conference website which can be accessed at http://www.statssa.gov.za/isi2009. Register before May 15 to qualify for our early bird discounted registration fee. Information on accommodation available for ISI 2009 in Durban is also available on the website.

Registration fee	Before May 15	After May 15, before August 1	After August 1 / on site
ISI or ISI section member IPM organizer, Authors and discussants of IPMs, regional participants	R2 500 (€250)	R2 750 (€275)	R3 500 (€350)
Student	R1 000 (€100)	R1 500 (€150)	R2 500 (€250)
Day registration (South African delegates only)	R 500	R 600	R 800
Other participant	R2 750 (€275)	R3 000 (€300)	R3 750 (€375)
Accompanying person (lunches included)	R1 750 (€175)	R2 000 (€200)	R2 750 (€275)
Accompanying person (lunches excluded)	R1 500 (€150)	R1750 (€175)	R2000 (€200)

Entitlements

Delegates:

Conference bag, session material, full access to the conference venue (including sessions and exhibition area), access to transport to and from the designated hotels and the airport, lunch vouchers for August 17-18, 20-22, 2009, evening functions on August 16, 18 and 22, 2009.

Accompanying persons:

As above, but may not present papers or posters and do not receive session material. Lunch vouchers are optional.

Day registration delegates:

Available to South African residents only, includes a conference bag, session material and lunch voucher.

Funding

Since this is the first Session of the ISI ever to be held in sub-Saharan Africa, we would like to ensure the broadest possible participation from African delegates, students and women. We are therefore investigating possible funding opportunities to enable the participation of these selected groups. More information on these funding opportunities will be available in due course and will be communicated on the ISI 2009 website.

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