



# **FSIN-AUC Technical Consultation Food and Nutrition Security and Resilience Analysis**

## **Are we effectively using the right data?**

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### **PANEL 3**

### **Background Discussion Paper**



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# **Data Governance and Institutional Capacities in Developing Countries**

Compiled by Naman Keita and Erdgin Mane

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## 1. Background and problem statement

Food and nutrition security will remain one of the prominent topics in the post-2015 Agenda for Sustainable Development. The Report of the Open Working Group (OWG) of the UN General Assembly on Sustainable Development Goals (SDGs) defines 17 proposed SDGs and 169 targets<sup>1</sup>. The UN General Assembly has already welcomed the report and has decided that it “shall be the main basis for integrating sustainable development goals into the post-2015 development agenda”. Food and nutrition security is directly represented through the second Sustainable Development Goal on Zero Hunger, which is entitled “*End hunger, achieve food security and improved nutrition and promote sustainable agriculture*” and establishes a set of targets to be met by 2030. Furthermore, several other SDGs and related targets will directly or indirectly contribute to improving food and nutrition security, as it is considered a multi disciplinary topic<sup>2</sup>.

The concept of resilience instead is a relatively new topic and is gaining more and more space in the policy agenda. The target 1.5 of the SDG 1 on ending poverty states “*By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters*”. However, resilience can be found as an adjective applied to various disciplines, such as infrastructures, human settlements and agricultural production systems.

The monitoring of these goals and targets will require an increased number of indicators, which will drive the international statistical agenda in the next 15 years. The United Nations Statistical Commission (UNSC) at its forty-seventh session, in February/March 2016, is expected to discuss and agree in some form on the indicator framework (and the set of indicators) for the measurement and monitoring of the SDGs/post-2015 development goals and targets, and its implementation. These indicators should be universally relevant for both developed and developing countries. They should be disaggregated to capture inequalities and minorities, while more than one indicator could be used to measure complex multidimensional targets. Many new indicators have been proposed without having an established methodology and the related primary data are not currently produced by countries. It is essential that the selection of indicators be guided by considerations related to the relevance, methodological soundness, measurability and understandability of the indicators and the list of indicators that will form the core of the SDG monitoring framework should be kept as manageable as possible, while trying to preserve the multidimensional and complex nature of the targets in question.

At continental level, the Comprehensive Africa Agriculture Development Programme’s (CAADP) Results Framework<sup>3</sup> identified 12 level 1 indicators for Agriculture’s Contribution to Economic Growth and Inclusive Development, 12 level 2 indicators for Agricultural Transformation and Sustained Inclusive Agricultural Growth and 12 level 3 indicators for Strengthening Systemic Capacity to deliver results. The level 1 indicators include three indicators related to Food and Nutrition Security (1.2.1 Prevalence of undernourishment (%), 1.2.2 *Status of malnutrition (a) Prevalence of underweight, b) Prevalence of stunting, c) Prevalence of wasting, d) Minimum of dietary diversity-women and e) Minimum acceptable diet for 6-23 months infants*) and 1.2.5 *Cereal import dependency ratio*. There are two indicators related to resilience among the level 1 indicators (1.4.1 *Percent of households that are resilient to climate and weather related shocks* and 1.4.2 *Human*

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<sup>1</sup>The full list of SDGs and respective targets can be found in this link: <https://sustainabledevelopment.un.org/topics>

<sup>2</sup>For example, the SDG 12 is about “ensuring sustainable consumption & production patterns”.

<sup>3</sup>The CAADP results framework (2015 - 2025) “Going for results and impacts”

[http://caadp.net/sites/default/files/the\\_caadp\\_results\\_framework\\_2015-2025.pdf](http://caadp.net/sites/default/files/the_caadp_results_framework_2015-2025.pdf), page 6

*sustainable development index*) and two resilience indicators among the level 2 indicators (2.4.1 *Coverage of social assistance. Social protection, social insurance and labour programmes* and 2.4.2 *Existence of food reserves, local purchases for relief programmes, early warning systems and food feeding programmes*)

The underlying primary statistical data needed for compiling all these indicators should meet a series of quality principles such as: relevance, reliability, accuracy, timeliness, coherence, comparability and accessibility. This increased demand in quantity, quality and diversity of data create a challenge for many countries, particularly in developing countries, where data systems are often weak, uncoordinated and not well integrated. But it is also an opportunity for strengthening their capacity as it is now widely recognized that statistical information is a key instrument in achieving development since the lack of adequate information prevents governments and policy makers to taking the right decisions. Now more than ever, there is global consensus on the need to strengthen statistical capacity in developing countries. The Millennium Development Goal (MDG) process has already triggered a huge improvement in country-level statistics through the National Strategies for the Development of Statistics (NSDS). The new SDG process is expected to trigger a real “data revolution” process. The UN Secretary General’s Independent Expert Advisory Group (IEAG) speaks about an “explosion” in the volume and production of data driven by a “growing demand for data from all parts of society”. IEAG also mentions that data revolution must address global inequalities in access to and use of data and should aim to “monitor development progress, hold governments accountable and foster sustainable development” (IAEG, 2014).

PARIS21 has prepared a foundational document for informing a Data Revolution project called “Road Map for a Country-led Data Revolution” (PARIS21, 2015a). This document *sets out the goals, activities and resources needed for developing countries to use data to achieve the sustainable development goals*. The Road Map defines the objectives of the data revolution: 1) *strengthen statistical systems in developing countries to produce better data for informing policies and managing development*, 2) *prepare data producers and users for the proliferation of new data sources and technology and turn the “data deluge” into better and more timely statistics*.

The objective of this paper is to serve as a background support for improving the effective access and use of information through enhanced coordination and agreed standards. The paper is organized as follows. The country-level institutional set up, the critical role of National Statistical Offices (NSOs) in coordinating the national statistical system, the results of some recent capacity assessment and resulting challenges are presented in the next section. Section III discusses the data gaps regarding food and nutrition security (FNS) and describes briefly the data needed for resilience analysis (RA). The strategies to improve country-level information and standards, such as the global strategy to improve agricultural statistics (GSARS), are illustrated in section IV. Key protocols and tools contributing to enhance data and information sharing environment are presented in section V. Finally, the last section concludes and provides some recommendations.

## **2. Institutional set up and capacity assessments at country level**

The institutional set for the statistical work at country-level consists in the national statistical system (NSS), the legal framework and the statistical programme<sup>4</sup>. The NSS *is the ensemble of statistical organizations and units within a country that jointly collect, process and disseminate official statistics on behalf of national government* (OECD, 2002). In order to strengthen the NSS in developing countries, the Action Plan for Statistics, established in Marrakech in 2004, initiated the development of the National Strategy for the Development of Statistics (NSDS) through the Partnership in

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<sup>4</sup> The country profiles of the NSS can be found in the following link: <http://unstats.un.org/unsd/dnss/>

Statistics for Development in the 21st Century (PARIS21). PARIS21 reports that NSDS have been implemented in nearly 100 countries, and have helped to:

- raise awareness about the key role of official statistics in development,
- ensure early involvement of users in the operation of NSS,
- better mobilize national funding and the involvement of technical and financial partners,
- improve dissemination.

However, in many countries, NSS are far from meeting the needs of the post-2015 policy agenda. Overall, the progress remains insufficient and the main problems are the following (PARIS21, 2015b):

- *funding remains dependent on sources outside of the country,*
- *the process of programming and annual monitoring and evaluation remains incomplete and does not include all producers,*
- *confidence in the NSS is low and governance remains weak, including transparency and independence.*

Another issue is that there has been limited inclusion of agricultural statistics in the first generation of NSDS and, in those cases where agriculture was included, the coverage has been limited. The current PARIS21 guidelines recognise that a well-designed NSDS will help a country to build a better integrated statistical system, with an improved integration of sector statistics production. In line with PARIS21 guidelines, the Global Strategy to Improve Agriculture and Rural Statistics has developed specific guidelines for Strategic Plans for Agriculture and Rural Statistics (SPARS) well articulated in the NSDS process as a means of better integrating Agriculture in the NSS. The scope of Agriculture and Rural Statistics has been extended to a broader framework for agriculture, including food security and related issues. A key feature of the SPARS is a clearly agreed survey calendar which should cover in the medium term, priority data needs in all subsectors and themes, including Food and Nutrition Security.

### **Tanzania Agricultural Statistics Strategic Plan 2014/15 to 2018/19**

Tanzania prepared an Agricultural Statistics Strategic Plan (ASSP) as an integrated part of the Tanzania Statistical Master Plan (TSMP) to provide a framework for strategic directions and appropriate mechanisms for guiding and accelerating the development of sustainable statistical capacity in the country.

The analysis of the situation of agricultural statistics system indicates the existence of various data producers and a large number of data collection activities which are not always well coordinated and integrated. Some of the major weaknesses and challenges included *Insufficient staffing and skill level*, diversity of data sources, overlap and inconsistencies in data, high data collection burden on both field staff and respondents, methodological issues, data reliability and timeliness (with level of accuracy of data often unknown, and large inconsistencies in time series, and discrepancies among various data sources even for the most basic data on crop production). The users are therefore unable to know which data reflects best the reality, *data gaps*, despite the abundance of data wide data gaps for some sub-sectors – livestock (inventories and production), *Data dissemination and archiving*. *The lack of coordination of initiatives among Development Partners (DPs) and inadequate and uneven flow of financial resources* for production of agricultural statistics were also identified as major challenges. These weaknesses and challenges resulted in a low performance of the ASS system with several data collection activities being conducted but not corresponding to users' needs as they are not always satisfied with the data being produced and face gaps.

In order to address the weaknesses and challenges, the following strategic goals were formulated in ASSP: (i) Strengthening Legal and Institutional Framework and Coordination of Agricultural Statistics System; (ii) Developing Human Resource Capacity to meet data production effort; (iii) Rationalizing Statistical Operations and processes, improving quality and user relevance of agricultural statistics data; (iv) Statistical Infrastructure improved; and (v) Physical Infrastructure and Equipment improved.

ASSP includes a detailed stakeholders analysis, a data matrix and an agreed and prioritized survey calendar. It is already helping in better coordination of activities and mobilizing funding for agricultural statistics in Tanzania.

Source: Tanzania Agriculture Statistics Strategic Plan (2014/15-2018/19), June 2014

Country assessments (CAs) are a key step in the preparation of the NSDS and SPARS. It provides information on data production activities, data availability and use. Such assessments of statistical development have been conducted by various institutions, often with slightly different statistical perspectives and objectives. The framework developed under FAO Global Strategy to Improve Agriculture and Rural Statistics initiative for assessing statistical capacity for agriculture statistics, is briefly reviewed here. This assessment framework is the result of an international collaboration effort. While it is customized to agriculture and rural statistics, it has a great deal in common with other capacity assessment frameworks, specifically the United Nations Statistical Commission's Generic National Quality Assurance Framework (NQAF), the PARIS21/IMF Task Team Statistical Capacity Building Indicators and those used by the World Bank (FAO, 2014).

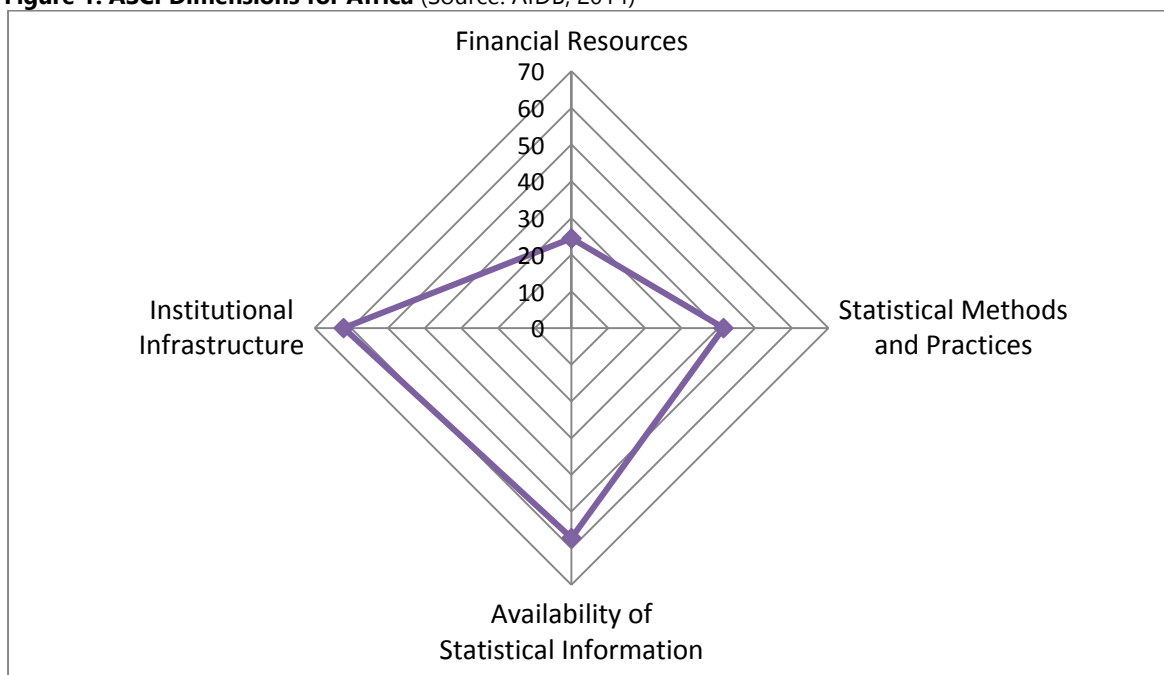
The tools for using the framework to assess statistical capacity at the country level have been built upon FAO's experience in conducting questionnaire-based inquiries and reviews to monitor the progress of agriculture statistics in Asia and Africa. The FAO framework assesses the national statistical capacity through four dimensions, each comprising an aggregation of a number of different elements/components. The four dimensions are:

- Institutional Infrastructure (Prerequisites Dimension),
- Resources (Input Dimension),
- Statistical Methods and Practices (Throughput Dimension), and
- Availability of Statistical Information (Output Dimension).

The *institutional infrastructure* consists in: the legal framework, coordination in statistical system, strategic vision and planning and integration of agriculture in the NSS and relevance (user interface). *Resources* are financial, human and physical infrastructure. The *statistical methods and practices* consists in the following components: statistical software capability, data collection technology, IT infrastructure, general statistical infrastructure, adoption of international standards, general statistical activities, agricultural market and price information, agricultural surveys, analysis and use of data and quality consciousness. The *availability of statistical information* is measured by: core data availability, timeliness, overall data quality perception and data accessibility.

An excellent implementation of the FAO approach can be found in the *Country Assessment of Agricultural Statistical Systems in Africa* report made by the African Development Bank (2014). The report presents the results of the assessment over 52 African countries. Assessing all four dimensions of the Agricultural Statistical Capacity Indicators (ASCI) for Africa overall, the report shows the continent to be *weak in allocating financial resources (24.4%) for agricultural statistical activities as well as in applying appropriate agricultural statistics methods and practices (41.4%). Nonetheless, the region demonstrates average strength for the dimensions "Institutional Infrastructure" (57.2%) and "Availability of Statistical Information" (62.1%)* (Figure 1). But, given the low score regarding methods, the quality of the available information is below standard in many countries.

**Figure 1: ASCI Dimensions for Africa** (Source: AfDB, 2014)



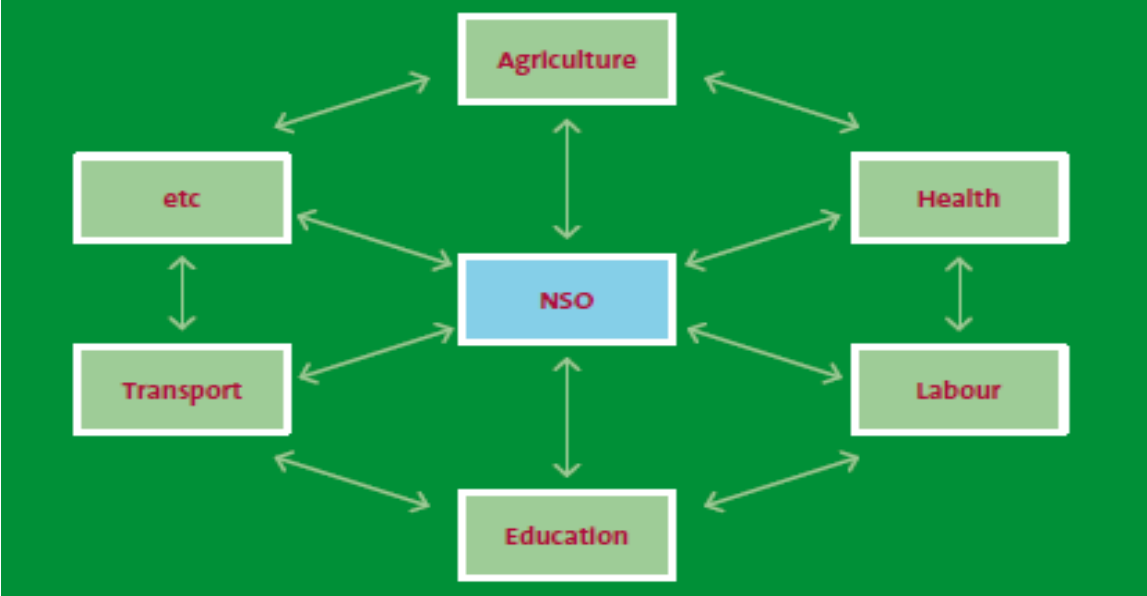
The same report in rating all the countries of the region highlights that *Ethiopia emerges as the best equipped country (66.5%) to run an effective and efficient agricultural statistics system and to produce timely, reliable and sustainable statistics. The next best performers are: South Africa (65.6%), Ghana (64.1%), Namibia (63.8%), and Egypt (62.9%). Guinea-Bissau and Libya emerge as the worst performers (below 20%) in their use of required standards to effectively undertake agricultural statistics development.*

The Asia-Pacific regional Action Plan to improve agricultural statistics 2013-17 (FAO/ADB/UN ESCAP, 2013) best describes the current state of the availability of agricultural and rural statistics at the national level in the region as "a wide spectrum that also corresponds to the wide range of economic development across the region with a group of highly industrialized countries, middle income countries, some that are at various points of transitioning from a centrally planned to a market economy, small island economies, very weak and fragile states, and less developed economies".

These assessments have a specific focus on agricultural statistical systems, nevertheless their starting point is the evaluation of NSS and its capacities. Moreover, most of the key issues and problems highlighted in the agricultural sector can certainly be extended to food and nutrition security, as this theme cuts across several sectors and deals with multi-sectoral issues. A common issue that emerges from the various country assessments is the need for coordination and integration among all the components of the NSS, with NSOs leading the process. This lack of coordination is the source of conflicting data in many countries, making it difficult to conduct sound analysis in many domains, including Food and Nutrition Security. Statistical legislation often does not explicitly refer to the National Statistical System with clearly defined responsibilities for each component even if mandate is given to the NSOs to carry out and coordinate statistical activities. NSOs should be put at the centre of the NSS and clear and appropriate mechanisms should be provided to cover the entire NSS.

Figure 2 presents a fully coordinated NSS with the NSO playing the central role for integrating the statistical activities in various sectors. Being FNS a multi-sectoral phenomenon, coordination of data collection, access and integration of various sources is essential for relevant and coherent information system in this area. The role of NSOs is key in mainstreaming FNS in the NSS and in ensuring coherence of statistical outputs from the various sectors is critical for an effective Food and Nutrition Security information system.

**Figure 2: Fully coordinated statistical system at the national level** (Source: GSARS, 2011)





### 3. Data gaps on food and nutrition security and resilience analysis

As mentioned earlier, food and nutrition security (FNS) is a multidimensional phenomenon created from the need to integrate the concepts of food security and nutrition security. The four dimensions of food security are: availability, access, utilization and stability. The nutrition dimension is very much related to the utilization dimension and the nutritional status is often considered as the final outcome of the four food security dimensions<sup>5</sup>.

Such complexity is consequently reflected on the data required for a comprehensive measurement of FNS. Indeed, the measurement of food security has focused on availability, stability, access and utilization, which has required a broad range of data sources both at macro and micro level. However, there are still large data gaps in many developing countries depending on food security dimension under consideration.

#### Food availability

Food availability is generally measured through the Food Balance Sheet data based on agricultural production and trade data at country-level. But even this basic production data is not produced regularly in many developing countries. FAO records show that only 38% of production data used for compiling FBS was official data from countries<sup>6</sup>.

#### Food access, utilization and stability

Food access and utilization, as well as nutrition, require instead micro-level data obtained from household or individual-level data and are more interested in capturing inequalities in the population groups. These dimensions are focused on food dietary consumption, both in terms of quantity and quality, and non-dietary aspects such as sanitation and disease. Household consumption and expenditure surveys (such as, as Household Budget Surveys and Living Standard Measurement Surveys) have played a key role in measuring these dimensions, particularly regarding food access. A review of the reliability and relevance of the food data collected by these surveys can be found in the work by Smith, Dupriez & Troubat (2014). However, nutrition data is less regularly produced with Demographic and Health Surveys (DHS) being the main source in many countries.

#### Nutrition outcomes

Another set of indicators are considered as outcomes of FNS. The FSIN (2014) concept note has listed the following:

- anthropometrics: heights, weights, and arm circumference;
- nutrient quality and behavior: dietary diversity, exclusive breastfeeding and disease control;
- biomarkers of nutritional status: anemia and micronutrient deficiencies.

Such indicators are based on individual-level surveys, which are more expensive and difficult to be implemented. For this reason, such surveys are scarce in developing countries and often are not representative at country level.

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<sup>5</sup> The Concept Note for the FSIN Technical Working Group on Measuring Food and Nutrition Security, prepared by Lele, U. and Master, W. A., provides a comprehensive review of the FNS definitions (FSIN, 2014).

<sup>6</sup> Paper prepared by the FAO's Statistics Division for AFCAS 2013 (FAO, 2013).

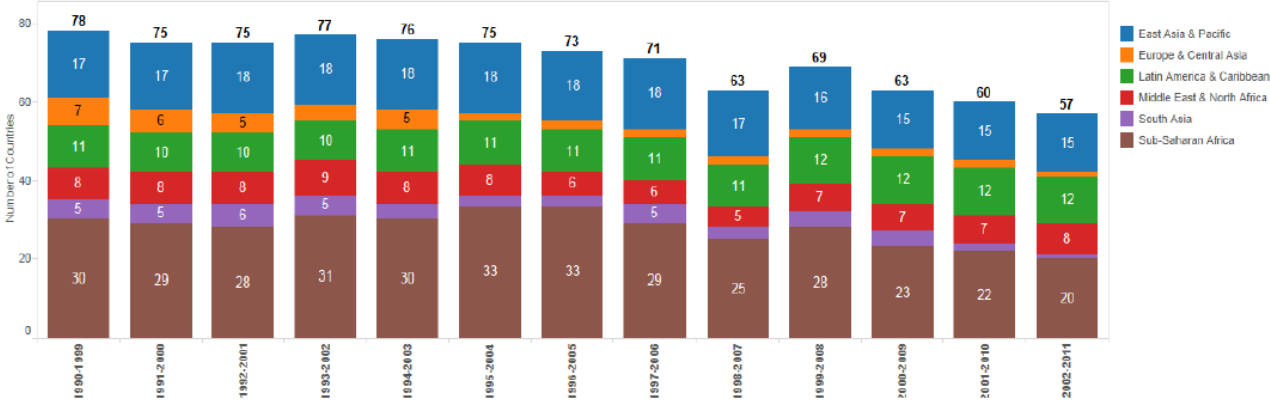
It is evident that in order to have a comprehensive picture of the FNS at country, region and global-level a set of food security would be needed. The most complete set of food and nutrition security indicators available is represented by the Suite of Food Security Indicators disseminated by FAO<sup>7</sup>.

Such a suite of indicators has also the merit of showing that, for most of the indicators, data of many developing countries are missing or time series have only one data point in time. This makes it impossible to monitor and draw conclusions on the trends of FSN for the countries that are also the most likely in need for informed policy interventions.

Household surveys data are fundamental not only to most of the dimensions of FNS but also to analyze resilience, which is probably even a more complex phenomenon than FNS. We will not discuss here the data needed for resilience analysis, since the FSIN Technical Series No. 3, prepared by Carletto, Banarjee and Zezza (2015), already provides a complete review on the data sources for conducting a resilience analysis (RA).

Given the key role of household consumption and expenditure surveys, as main data source for FSN and RA in addition to their role for poverty monitoring, we would like to discuss here the availability of such data. Serajuddin, *et al.* (2015) indicates that the availability of such data, usable for estimating poverty, has improved over time. They measure data availability by the presence of at least two data points every ten years. Figure 2 shows 10-years moving averages of the number of countries with less than 2 data points (surveys) for poverty assessment, from 1990 to 2011. The graph shows that the situation has improved considerably, however, in the last decade there are still 57 countries with less than two data points, with Sub-Saharan Africa accounting for more than one third of them (20).

**Figure 2: Number of countries with less than 2 data points** (Source: Serajuddin *et al.* 2015)



The main household surveys directly relevant for FNS and RA are the following: Household Budget Surveys (HBS), Household Income Expenditure Surveys (HIES), Living Standards Measurement Study (LSMS), Demographic and Health Surveys (DHS), Multiple Indicator Cluster Surveys (MICS), Integrated Household Surveys (IHS) and Comprehensive Food Security and Vulnerability Analysis (CFSVA), Vulnerability assessment and mapping (VAM). Other relevant sources include market price surveys, agricultural surveys and censuses.

A World Bank report (2015) presents the issues and recommendations for improving the household surveys in the post-2015 development agenda. A paper by Demombynes and Sandefur (2014)

<sup>7</sup>The Suite of Food Security Indicators can be found at the following link: <http://www.fao.org/economic/ess/ess-fs/ess-fadata/en/>.

presents instead the costs for filling the gap of the data revolution. They estimate that *given existing international survey programs, the cost to international aid donors of filling remaining survey gaps is manageable - on the order of \$300 million per year*. They also argue that *any aid-financed expansion of household surveys should be complemented with (a) increased access to data through open data protocols, and (b) simultaneous support for the broader statistical system, including routine administrative data systems*.

A fundamental issue with food and nutrition security data is the overall perception that, even when available, such information has not been used in policy decision making processes. This is in part due to the poor quality of data and, in particular, due to fact that the information is not made available in a timely and comprehensive manner. Therefore, the capacity development activities should focus not only on strengthening the information base, but also on enhancing the linkages between FNS information and policy decision making.

#### 4. Strategies to improve country-level information and standards

The Road Map for a Country-led Data Revolution (Paris21, 2015a) highlights the need for *a concerted effort from the international community over the next 15 years will be needed to ensure that SDG monitoring does not impose inordinate costs on developing countries*. In this regard, the Road Map launches a 'big idea' to increase the official development assistance (ODA) for statistics from around 0.5% of ODA at present to around 1% by 2030. Moreover, it recommends creating a system (Data Compact), where countries sign up to a limited set of basic principles and receive, in return for progress, enhanced and flexible financial and technical assistance.

A series of global programmes and activities have already started or are about to start in order to fill the statistical gap on FNS related areas. The major programmes and initiatives and their main area of focus include:

##### Improving coordination and data access and use

- The **Food Security Information Network (FSIN)** is a global initiative co-sponsored by FAO, WFP and IFPRI to strengthen food and nutrition security information systems for producing reliable and accurate data to guide analysis and decision-making. It is a community of practitioners network, 950+ members from 95 countries. FSIN serves as a neutral technical platform for exchanging expertise, knowledge and best practices, developing harmonized methods and tools, and facilitating capacity development on food and nutrition security measurement and analysis. It is composed by three team working group on: i) Resilience Measurement, ii) Food Security Indicators, and iii) Food Price Databases Harmonization. The later is inter-agency initiative aiming at harmonizing and integrating market prices and price statistics<sup>8</sup>.

##### Improving data collection methodologies and strengthening countries' capacity

- The **Global Strategy to Improve Agricultural and Rural Statistics** is a multi-partner initiative developed under the auspices of the United Nations Statistical Commission and aiming at: i) Developing guidelines on new cost-effective methods to produce/disseminate agricultural and rural statistics, ii) Strengthening regional training Institutions and support training of national statisticians, iii) Providing technical assistance in designing strategic plans for agricultural and rural statistics, improving institutional coordination and implementing new statistical methods and tools. The Global Strategy relies on 3 pillars:

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<sup>8</sup>More information is available at: <http://fsincop.net>

defining a minimum set of core data (MSCD) to be produced by all countries, integration of agriculture in the national statistical system and strengthening governance and capacity building. GS has produced a large number of publications on methods and standards to be used to improve agriculture and rural statistics including Food Security<sup>9</sup>. Strategic Plans for Agricultural and Rural Statistics are also being developed in a growing number of countries in Africa and Asia Regions which could provide a framework for mainstreaming some dimensions of food security in the National Statistics Systems

#### *Improving data availability*

- The **Living Standards Measurement Study - Integrated Surveys on Agriculture (LSMS-ISA)** is a household survey project established with a grant from the Bill and Melinda Gates Foundation and implemented by the LSMS team. Recognizing that existing agricultural data in the region suffers from inconsistent investment, institutional and sectoral isolation, and methodological weakness, the LSMS-ISA project collaborates with the national statistics offices of its eight partner countries in Sub-Saharan Africa to design and implement systems of multi-topic, nationally representative panel household surveys with a strong focus on agriculture. The primary objective of the project is to foster innovation and efficiency in statistical research on the links between agriculture and poverty reduction in the region. In each partner country, the LSMS-ISA supports multiple rounds of a nationally representative panel survey with a multi-topic approach designed to improve the understanding of the links between agriculture, socioeconomic status, and non-farm income activities. The frequency of data collection is determined on a country-by-country basis, depending on data demand and the availability of complementary funding<sup>10</sup>.
- The **Agricultural and Rural Integrated Survey (AGRIS)** is a standardized multipurpose survey on agricultural farms. It is a ten year programme with rotating modules, where the collection of many variables is done with reduced costs and burden (1-2 modules per year). The core module with production and socio-demographic variables will be conducted every year. Additional modules (type of employment, cost of production and prices, use of machinery, production methods, etc.) will be implemented every 3 years. Therefore, it adopts an integrated approach: economic data (production, inputs, farm-gate prices, production cost, farming practices, etc.), social data (sex, age, education, type of employment, income and social protection), environmental data (land use, water use, pesticides, etc.). Data collection will be conducted using new technologies, including GPS, CAPI and RS.
- The **“Voices of The Hungry”** project establishes a new metric to compile indicators of food access for global and national monitoring, as required by SDG Target 2.1. The metric is obtained by the use of a measurement tool called Food Insecurity Experience Scale (FIES), an example of experience-based food insecurity scales which use self-reported information on experiences and conditions associated to the inability to access food to classify respondents on a scale of severity. Currently, experience-based food security scales are used only in few countries (US, Canada, Brazil, Mexico, Guatemala) and therefore global monitoring cannot be based on national sources. For this reason, FAO will produce a global food access indicator through direct data collection in those countries where no compatible official data exist. Since 2014, annual FIES estimates are available for about 150 countries, through the Voices of the Hungry project. At the same time, capacity development support

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<sup>9</sup>More information is available at: <http://www.gsars.org/>

<sup>10</sup>More information is available at: <http://go.worldbank.org/BCLXW38HY0>

and technical assistance is being provided to countries that request it to introduce the FIES or similar scales in national household surveys<sup>11</sup>.

FAO and the World Bank are also working with other partners in order to establish a Global Survey Hub called **Global Hub For Rural and Agriculture INtegrated Surveys** (GRAINS)<sup>12</sup> in order to tackle relevant methodological challenges for harmonizing LSMS-ISA and AGRIS approaches. It aims at: i) harmonizing the core content of surveys, ii) improving linkages with other data sources e.g. Big Data, Geo-spatial data, iii) Pilot AGRIS in limited number of countries, iv) introduce improvements in LSMS-ISA to better align with the MCSD of the Global Strategy, and v) develop methodological and operational guidelines.

## 5. Key protocols and tools for data sharing

The world's greater repository of household surveys is the International Household Survey Network<sup>13</sup> (IHSN), which is an informal network of international agencies that operates exclusively on the basis of voluntary contributions from its members. The mission of the IHSN is *to improve the availability, accessibility, and quality of survey data within developing countries, and to encourage the analysis and use of this data by national and international development decision makers, the research community, and other stakeholders.*

In order to achieve its mission, the IHSN provides among others:

- a central survey data catalog for data users on the availability of survey and census data from multiple sources;
  - standards, tools and guidelines for data producers to document, disseminate, and preserve microdata according to international standards and best practices;
  - improved collaboration between data producers and users.
- Software

It is important to notice that data openness and online accessibility has improved considerably in the last decades even thanks to the IHSN. Demombynes and Sandefur (2014) the surveys available in IHSN in order to investigate the trends data production and data openness in the various regions. Figure 3 shows that the trend is positive in both cases, since the declines in the recent years is not driven by data productive but by the time lapse needed for their dissemination. It is important noticing that Sub-Saharan Africa has become the region with the highest share of data accessible online, close to 50%.

In order to facilitate data sharing among producers and users, beyond the guidelines IHSN provides also a series of tools:

- **DDI Metadata Editor (Nesstar Publisher)** - The IHSN Metadata Editor, also known as the Nesstar Publisher, is a specialized XML editor compliant with the Data Documentation Initiative (DDI) 2.n and the Dublin Core metadata standards.
- **Statistical Disclosure Control (SDCMicro)** - SDCMicro is free, R-based open-source package for the generation of protected microdata for researchers and public use. Data from statistical agencies and other institutions are mostly confidential. This package can be used for the generation of anonymized (micro)data, i.e.
- **Microdata Cataloging Tool (NADA)** - NADA is a web-based cataloging system that serves as a portal for researchers to browse, search, compare, apply for access, and download

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<sup>11</sup> More information is available at: <http://www.fao.org/economic/ess/ess-fs/voices/en/>

<sup>12</sup> Provisional name.

<sup>13</sup> More information is available at: <http://www.ihsn.org/home/>

relevant census or survey information. It was originally developed to support the establishment of national survey data archives.

An important tool for deriving food security statistics from national household surveys is the free stand-alone software **ADePT-Food Security Module (FSM)**. It has been developed by FAO's statistics division, in collaboration with the World Bank's Computational Tools team, Development Research Group<sup>14</sup>. ADePT-FSM aims to improve the quality, consistency and availability of food security statistics derived from National Household Surveys (NHS), such as LSMS, HIES and HBS, containing food consumption data. These statistics are useful for assessing and monitoring food security at national and subnational levels and also to conduct capacity development activities in developing countries<sup>15</sup>.

Other relevant database providing aggregated country data include FAOSTAT<sup>16</sup> and CountrySTAT<sup>17</sup>. At global level, FAO Statistics division keeps a census database with data and metadata for about 100 countries.

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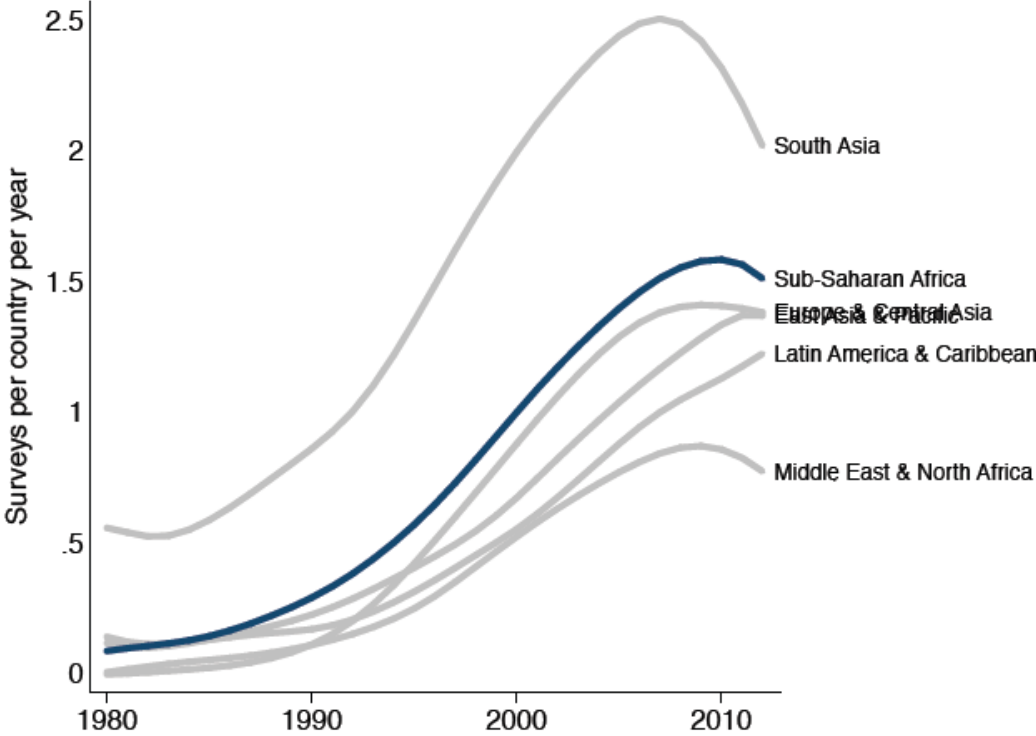
<sup>14</sup> This activity has been funded by the European Union through the Improved Global Governance for Hunger Reduction Programme.

<sup>15</sup> More information is available at: <http://www.fao.org/economic/ess/ess-fs/fs-methods/adept-fsn/en/>

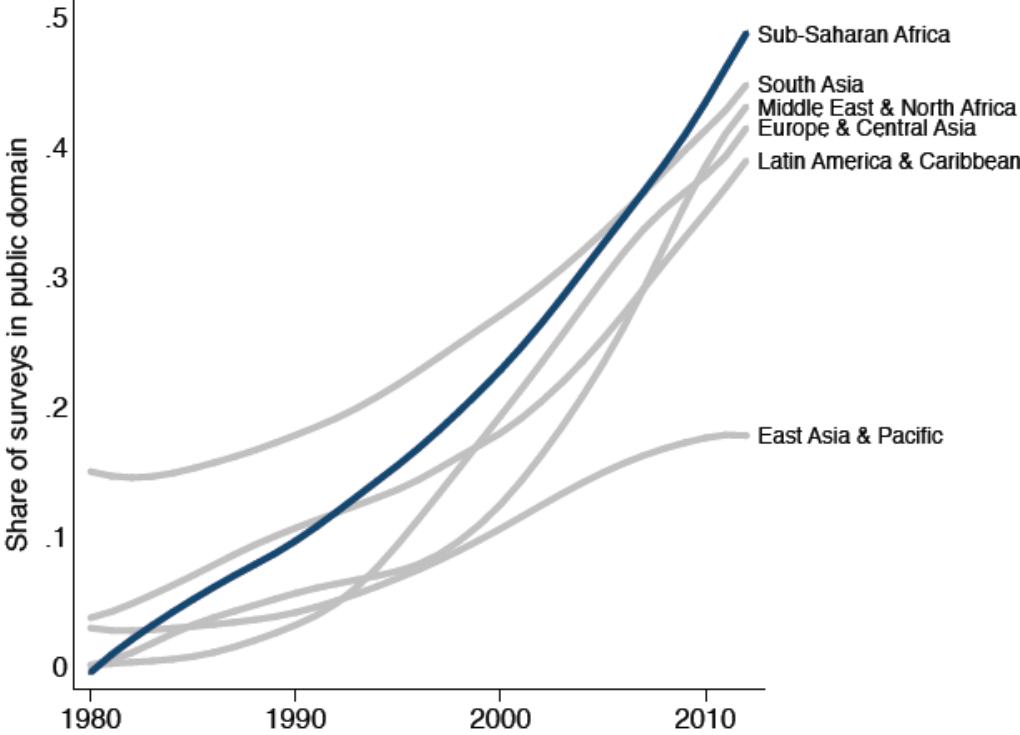
<sup>16</sup> See the FAOSTAT website (<http://faostat3.fao.org/home/E>) for more information.

<sup>17</sup> See <http://www.countrystat.org/> for more information.

**Figure 3: Survey availability and their online access** (by Demombynes and Sandefur, 2014)  
 (a) Number of surveys



(b) Share of survey data open to public





## 6. Conclusions and recommendations

In conclusion, it appears that there is growing trend in demand for more and better quality data to support the monitoring of the international, regional and national agenda and policies related to Food and Nutrition Security Agenda, such as Post 2015 Sustainable Development Goals, the CAADP and its corresponding national programmes and National Food and Nutrition policies.

While this context creates opportunities for renewed support to countries' data systems, there are challenges related to the institutional capacity and coordination mechanisms in many developing countries, particularly in Africa. This translates into data gaps and overlaps and conflicting data, which is a constraint to respond effectively to the growing data needs particularly regarding Food and Nutrition Security. Moreover, in many countries, the NSO's role in coordinating food security information and analysis is limited, which is a challenge for its mainstreaming in national statistical programmes.

However, a number of programmes and initiatives have emerged that aim at assisting countries in overcoming the challenges related to production, analysis and dissemination of data related to Food and Nutrition Security. Some of the major programmes and initiatives are briefly presented in the paper. Beyond strengthening the FNS information base in developing countries, such capacity building activities should focus on enhancing the data use in policy decision making processes. The National Statistical Offices, should play a central role in strengthening the linkage between data production and its use by policy makers and in mainstreaming FNS in the National Statistical System through National and Sectoral Statistics Strategic Plans (such as NSDS and SPARS).

Data access and use for evidence-based FSN policies can also be enhanced by improving data openness and data sharing protocols. The most important microdata sharing tool for FSN remain the IHSN, but there are other relevant tools that allow access to cross-country aggregated data, such as FAOSTAT and CountrySTAT.

Discussing the details of FNS data goes beyond the scope of this paper; however, it is worth mentioning that countries-level nutritional data need to be strengthened, since currently, in many countries, DHS is the only source of nutrition data. In particular, individual-level nutrition surveys are needed and their country representativeness should be improved. Moreover, nutrition surveys are not linked with HIES or HBS, which makes difficult investigating on the role played by socio-economic decision on nutrition outcomes. Hence, including a nutrition module in HIES/BBS could be a possible solution.

In order to further support countries in improving their data systems, particular attention should be paid to the institutional arrangements and mechanisms for their proper coordination. Appropriate legal framework with clearly defined roles and responsibilities is a necessary element. Also an agreed calendar of key statistical activities relevant to Food and Nutrition Security should be part of the Strategic Plans for Agriculture and Rural Statistics being promoted by the Global Strategy to Improve Agriculture and Rural Statistics. Donors and international partners, who support statistical activities, should submit requests for survey data only if these are in line with the agreed calendar and do not increase burdens to NSOs. Finally, more effort is needed to expand the protocols and tools for data sharing among FSN partners at global, regional and country level. The data access and sharing strategy should be part of the SPARS and NSDS process.



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