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粮食及  
农业组织

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pour  
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et  
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Organización  
de las  
Naciones  
Unidas  
para la  
Agricultura  
y la  
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### FOOD SECURITY STATISTICS IN THE TRANSITION FROM THE MILLENNIUM DEVELOPMENT GOALS TO THE SUSTAINABLE DEVELOPMENT GOALS

#### Introduction

Since its foundation, FAO has had a clear mandate to monitor the status of global agriculture and food security. Article 1 of the FAO Constitution states that “The Organization shall collect, analyze, interpret and disseminate information relating to nutrition, food and agriculture”. This mandate was reinforced by the six editions of the World Food Survey, that started in 1946 and were conducted until 1996. In that same year, the World Food Summit set the global target to halve the number of hungry people by 2015, and FAO was mandated to monitor progress towards this goal, using as main indicator the Prevalence of Undernourishment (PoU). This led to the publication, from 1999, of the annual *State of Food Insecurity in the World* (SOFI) reports. With the Millennium Declaration, the FAO was charged to use the PoU also for monitoring progress towards Target 1.c of the Millennium Development Goal (MDG) 1 -- Halve, between 1990 and 2015, the proportion of people who suffer from hunger – and to report progress at global, regional and country level. This exercise formed part of the SOFI, and was included in the Global MDG Report. Both the 1996 World Food Summit goal and the MDG 1 target 1.c were due to be reached by 2015. Hence the monitoring cycle of these two targets is now concluded.

The 2030 Agenda for Sustainable Development was approved by the UN General Assembly in September 2015. This Agenda will replace the Millennium Development Goals, and propose a new, broader and universal set of actions focusing on people, the planet, prosperity, peace and partnership. The new Sustainable Development Goals (SDGs) and targets is expected to drive the work and the efforts of the international community for the next 15 years. There will be 17 Goals and 169 targets. This implies more and wider monitoring efforts compared to MDGs, which were focused on a relatively limited set of priorities. Food- and agricultural-related targets feature more prominently in the 2030 Agenda, as one Goal is entirely dedicated to these themes. FAO will be called upon playing a wider role in the monitoring of progress towards the targets and in supporting the achievement of the Goals.

This note aims at describing

- how the indicator framework for the SDGs is being identified;
- challenges posed by the need to monitor progress towards the SDGs; and
- activities that the FAO Statistics Division is enacting for addressing the challenges posed by the new monitoring framework.

### **Identifying the indicator framework and monitoring the SDGs**

Based on the UN General Assembly decisions of September 2014, the UN Statistical Commission is the institution responsible for developing the SDG monitoring framework and driving the definition of the indicators. In 2015 the UN Statistical Commission established an Inter-Agency Expert Group on SDG indicators. The definition of the indicators is taking place in four steps.

- A preliminary list was prepared in March 2015, and submitted by different Agencies to the UN Statistical Commission and member countries, which undertook inter-governmental negotiations.
- A more advanced draft list was compiled by the UN Statistical Commission on the basis of input from UN agencies, and discussed by the Inter-Agency Expert Group on SDG indicators in June 2015.
- An electronic discussion took place within a forum promoted by the Inter-Agency Expert Group on SDG indicators until September 2015.
- A final list was drawn during the second meeting of the Inter-Agency Expert Group on SDG indicators at the end of October 2015.

The UN Statistical Commission will endorse the final list of indicators in March 2016.

The Inter-Agency Expert Group on SDG indicators is currently in charge of developing the indicator framework, and of guiding countries in the implementation of the indicators once they will be approved. To this end, for each SDG it will be established a global monitoring group. The Inter-Agency Expert Group on SDG indicators will also take responsibility for reviewing methodological developments, for promoting the use of new data sources and reviewing statistical capacity-building initiatives. Last but not least, the Inter-Agency Expert Group on SDG indicators will report on progress towards the SDG goals and targets at global and regional levels.

The Membership of Inter-Agency Expert Group on SDG indicators includes 28 National Statistical Offices – two from each region -- on a rotating basis, plus a number of International agencies and UN Regional Commissions -- which participate as observers -- the UN Statistics Division as Secretariat and other stakeholders, including representatives of the private sector and civil society.

The Africa region is represented by seven countries, including two from Eastern Africa (the United Republic of Tanzania and Uganda), two from Western Africa (Cabo Verde and Senegal), two from Middle and Southern Africa (Botswana and Cameroon), and one country from Northern Africa (Algeria).

International organizations will continue playing a significant role in the monitoring of the SDGs. As it happened in the monitoring of the MDGs, they will continue monitoring targets at the global and regional level, contributing to the definition of metrics and indicators and developing methods, standards and tools for data collection. They will disseminate global datasets that ensure international comparability of the indicators, producing annual progress reports. Moreover, they

will promote an enhancement of technical capacity at country level, and support countries in the implementation of the strategic framework.

On a growing number of themes, the Indicators Framework of the SDGs will not be able to rely on official statistical sources. Non-official sources will likely be more frequently used than in the past, which will call for increased efforts to ensure data harmonization and to fill data gaps. In this context, international organizations may also launch direct data collections to produce indicators which are not yet covered by official statistics. Increasing importance will assume, in such cases, the Statistical Quality Assurance Framework and statistical governance.

### **More and more complex indicators are required**

Indicators for the SDGs will need to be consistent with the ambitious and universal character of the 2030 Agenda for Sustainable Development. They will need to be valid and applicable to all countries, irrespective of the level of income and development; and given the ambition to monitor complex multidimensional targets and to capture inequalities and minorities, a large number of indicators will likely be monitored. This poses several technical challenges, as for several targets there are currently no established indicators, hence new ones will need to be identified. Rigorous technical criteria were established for the selection of indicators. In particular, they need to be available at global level in order to be considered in the SDGs monitoring. This is a main requirement.

At the same time, statistical capacity in several countries is limited. Increasing efforts will need to be undertaken for enhancing the technical capabilities of national and regional statistical offices, and the all institutions in charge of collecting relevant data, such as line Ministries.

### **An increasing role for FAO**

Several Goals are associated with FAO's mandate. Specifically this is the case of Goals 2, 14 and 15. Goal 2 is directly and entirely related to FAO's work and mandate, as it pledges to "End hunger, achieve food security and improved nutrition and promote sustainable agriculture". Through the work of its Fisheries Department, the FAO has much to contribute also to Goal 14, which pledges to "Conserve and sustainably use the oceans, seas and marine resources for sustainable development"; and to Goal 15, which aims to "Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss".

Important contributions can be offered by FAO also to the monitoring of Goal 5, which aims to "Achieve gender equality and empower all women and girls", given the key role played by women in ensuring food security. This also applies to Goal 6, which pledges to "Ensure availability and sustainable management of water and sanitation for all"; to Goal 12, which aims to "Ensure sustainable consumption & production patterns", and to Goal 13, which aims to "Take urgent action to combat climate change and its impact".

In the last biennium (2014-15), FAO has identified a core set of indicators for monitoring the targets of the SDGs, on the basis of broad technical consultation process conducted with both internal and external parties, and primarily with the International Fund for Agricultural Development (IFAD) and the World Food Program (WFP). These two organizations are currently participating with the FAO in the production of the SOFI reports.

The core set of indicators identified by FAO is based on sound definitions and relevance criteria with respect to specific targets. Most indicators identified are available from national statistical

system, and do offer a good level of reliability, coverage, international comparability and granularity. The baseline year – which is likely going to be 2015 – and quantitative targets for 2030 are still to be defined.

The core set identified by FAO includes 29 indicators for monitoring 22 targets that fall under FAO’s mandate. Among those, only 3 are established indicators in the MDG monitoring process, while the others are newly proposed indicators which entail new data requirements. Among the indicators proposed, some are currently produced outside of the national statistical systems; hence they will pose issues of ownership – which should be brought back to national institutions – and validation.

## Monitoring SDG 2

As mentioned, SDG 2 “End hunger, achieve food security and improved nutrition and promote sustainable agriculture” is central to FAO’s mandate. The Goal is and highly multidimensional, and requires a wide set of indicators.

The Tables below report the specific targets of the Goal and the indicators that are being proposed for each of them. SDG 2 has 5 targets (2.1 to 2.5) and 3 Means of Implementation (2a, 2b and 2c).

<b>Target 2.1</b>	By 2030, end hunger and <b>ensure access by all people</b> , in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round	
	Ind. 2.1.1	Prevalence of Undernourishment (PoU)
	Ind. 2.1.2	Prevalence of population with moderate or severe food insecurity, based on the Food Insecurity Experience Scale (FIES)

<b>Target 2.2</b>	By 2030, <b>end all forms of malnutrition</b> , including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons.	
	Ind. 2.2.1	Prevalence of Stunting in children under 5 years of age
	Ind. 2.2.2	Prevalence of Overweight children under 5 years of age
	Ind. 2.2.3	Women Dietary Diversity Score

<b>Target 2.3:</b>	By 2030, <b>double the agricultural productivity and incomes of small-scale food producers</b> , in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment	
	Ind. 2.3.1	Value of production per labour unit by classes of farming/pastoral/forestry enterprise size
<b>Target 2.4:</b>	By 2030, <b>ensure sustainable food production systems</b> and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality	
	Ind. 2.4.1	Percentage of agricultural area under sustainable agricultural practices
	Ind. 2.4.2	Disaster damage and loss to agriculture

<b>Target 2.5:</b>	By 2020, <b>maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals</b> and their related wild species, including through soundly managed and diversified seed and plant banks at the national, regional and international levels, and ensure access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed	
	Ind. 2.5.1	Ex-situ crop collections indicator
	Ind. 2.5.2	Percentage of local breeds classified as being at-risk, not-at-risk, & unknown risk of extinction
<b>Target 2.a:</b>	<b>Increase investment</b> , including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development and plant and livestock gene banks in order to enhance agricultural productivity capacity in developing countries, in particular in least developed countries.	
	Ind. 2.a.1	Agriculture Orientation Index for Government Expenditures

Target 2.b:	<b>Correct and prevent trade restrictions and distortions in world agricultural markets</b> , including through the parallel elimination of all forms of agricultural export subsidies and all export measures with equivalent effect, in accordance with the mandate of the Doha Development Round	
	Ind. 2.b.1	Evolution of potentially trade restrictive and distortive measures in agriculture
Target 2.c:	Adopt measures to ensure the <b>proper functioning of food commodity markets</b> and their derivatives and facilitate timely access to market information, including on food reserves, in order to help limit extreme food price volatility	
	Ind. 2.c.1	Indicator of (food) Price Anomalies (IPA)

Monitoring the wide set of indicator reported in the Table above implies several challenges. Among the new indicators, the FIES is now largely produced outside the national statistical system. FAO collected data on this indicator in about 150 countries through the Gallup World Poll, in order to establish a global standard which allows computing comparable measures in different countries. Through time, FAO will support member countries for the institutionalization of the indicator in the national statistical systems.

For other indicators data collection still needs to be started on a regular basis. This is the case, for instance, of the “Value of production per labor unit by classes of farming/pastoral/forestry enterprise size”. Currently the indicator can only be computed in some countries and harmonized criteria for its definition still need to be fully determined.

### **FAO initiatives in view of monitoring the SDGs**

A number of initiatives have been started in the last few years to facilitate the monitoring of SDG and support member countries in this exercise. One of these is the Global Strategy to Improve Agricultural and Rural Statistics. In short, the Global Strategy is developing guidelines on new and cost-effective methods for producing and disseminating data. In collaboration with regional training institutions the Global Strategy is providing technical Assistance in designing sector-specific strategic plans, in improving institutional coordination and in testing new statistical tools, offering direct support training to national statistical offices, also on data collection. More details on the Global Strategy are discussed under Agenda Item 5.

Three other projects have been undertaken by the FAO Statistics Division in view of the monitoring of the Sustainable Development Agenda:

1. the “Voices of the Hungry” project, and the inclusion of the Food Insecurity Experience Scale (FIES) module in national household surveys;
2. the development and testing of the Agricultural and Rural Integrated Survey (AGRIS); and

3. the establishment of a Global Survey Hub to support countries in the design and implementation of an integrated agricultural survey programme (AGRIS, LSMS-ISA).

These are described below in more details.

#### *The “Voices of the Hungry” project*

As mentioned, the monitoring of Target 2.1 of SDG2 requires a new indicator of people’s ability to access food. Effective indicators exist only in few countries. Hence, in the immediate future, the global monitoring cannot be based on national sources. With the “Voices of the Hungry” project, FAO has, for the first time, engaged in direct data collection, and produced directly a global indicator of access to food.

The “Voices of the Hungry” project has established the Food Insecurity Experience Scale (FIES). This is a metric of the severity of food insecurity, which can be used either at the households or the individual level. Since 2014, annual FIES estimates have been conducted in about 150 countries through the Gallup World Poll. The project has provided technical assistance to countries, helping them to introduce the FIES in national household surveys. The idea is that national institutions will gradually take over the task of estimating the FIES at national and subnational level, on the basis of the methodology and the harmonized standard provided by FAO.

The “Voices of the Hungry” project will bring about several advantages. First, it will provide a direct measure of people’s ability to access food rather than inferring food security conditions indirectly, from other information. Second, it will allow assessing the depth of food insecurity – whether people experience mild, moderate, or severe lack of access to food. Third, a sound methodology, based on Item-Response theory, is employed to assess the reliability and precision of the measurement. Fourth, being applicable at the individual level, the FIES allows analyzing gender related disparities in access to food.

In general, the methodology proposed by the “Voices of the Hungry” project is cheap and easy to apply, as it is based on a short questionnaire of 8 yes/no questions -- which can be easily administered in virtually any household or individual survey. Governments, on their part, can use the FIES indicator for targeted intervention, and for monitoring the associated impact.

#### *The Agricultural and Rural Integrated Survey (AGRIS) project*

The AGRIS project is proposing a new methodology for conducting a standardized multipurpose survey on agricultural farms. The idea is to design a 10-year programme of surveys with rotating modules, in which information on some variables are collected more frequently, while information on variables that change at a slower pace are collected every few years. This approach may eventually replace or integrate agricultural censuses. The system of rotating modules would allow significant cost savings, as statistical offices would have to collect data on one to two modules per year.

The AGRIS project envisages the definition of a Core Module, which will be used to collect production and socio-demographic variables. This would be administered every year. Other modules are being developed, on employment, on cost of production and prices, on the use of machinery, production methods and other aspect of farming. These modules would be administered with lower frequency, every 3 years, as information in this domain is expected to vary less frequently.

The AGRIS project proposes to use an integrated approach, in which economic data, such as production, inputs, farm-gate prices, production cost, farming practices, are combined with social data – on sex, age, education, employment, income – and environmental variables, such as land use, water use, pesticides use. The project is also proposing innovative data collection methods, such as the use of GPS, CAPI, and remote sensing.

The AGRIS project will be piloted in a limited number of countries over the next biennium. The project is expected to provide countries with an integrated programme of agricultural surveys for collecting both annual and structural data of agriculture, taking into account the economic, social and environmental dimensions of the farms. In so doing, the approach taken by AGRIS is to use both households and farms as units of analysis. The project will also provide an opportunity for testing new methodologies developed under the Global Strategy, and building countries' capacity to collect a minimum set of core agricultural data, by making available standard modules for collecting data.

In the context of the SDGs, AGRIS will be instrumental in providing estimates on the “Value of production per labour unit by classes of farming/pastoral/forestry enterprise size”, and specifically on the productivity of small holders in agriculture.

#### *The Global hub for Rural and Agriculture INtegrated Surveys (GRAINS)*

This initiative, which is still under definition, aims at establishing a global repository of survey data, while at the same time tackling methodological challenges for harmonizing different surveys, primarily the approaches of the LSMS-ISA and the AGRIS project. The idea is to pursue the harmonization of the core content of these exercises, which are currently based on different sampling units and sampling frames. Improvements will be introduced in the LSMS-ISA, to better align them with the Minimum Core Set of Data proposed by the Global Strategy. At the same time, methodological and operational guidelines will be developed for data collection. At the same time, the initiative aims at improving linkages with other data sources, including Big Data and geo-referenced data.

The long term ambition of GRAINS is to build a one-stop shop for the implementation of integrated agricultural surveys. The initiative will provide a repository of micro-data, but also of knowledge and documentation on methodologies which could serve as starting point for scaling up implementation through regional hubs. This will lead to expanded use of agricultural survey data in low income countries, while at the same time pursuing better integration of agricultural surveys in the national Statistical Master Plan promoted by the Global Strategy.