Open Working Group on Sustainable Development Goals (OWG)

Statistical note for the issue brief on:

Sustainable Agriculture

(Updated draft as of 14 February 2014)

1 Main policy issues, potential goals and targets

The world’s population is predicted to increase to 9 billion people by 2040. Some of the world’s highest rates of population growth are predicted to occur in areas that are highly dependent on the agriculture sector and have high rates of food insecurity. Growth in the agriculture sector is one of the most effective means of reducing poverty and achieving food security. Innovative approaches are needed across the agriculture sector to increase productivity while at the same time to conserve natural resources and to use inputs sustainably and efficiently. Sustainability of production and commercial viability must be linked and should be measured. Such approaches will require the participation of smallholders, women, indigenous peoples and marginalized groups.

As the Millennium Development Goals (MDGs) draw to a conclusion, there is widespread consensus that new development processes must embody sustainability – not only with respect to natural resource use, but also in the context of social and economic dimensions, with governance playing a critical role in sustainable development.

In spite of attempts to date, a critical policy issue surrounding the formulation of goals, targets and indicators for sustainable food systems and agriculture in general is that countries have varying levels of capacities to fully achieve sustainable development and different priorities, based in part on their levels of development. A country may be fully committed to a sustainability agenda, but it may lack the necessary finance, resource endowments and technical know-how to attain sustainable development. In target setting, this issue needs to be taken into account.

The FAO has recently developed Strategic Objectives that focus on the policy issues related to sustainable development, with SO2 being of particular relevance to measuring and monitoring sustainable agriculture. The five FAO Strategic Objectives are:

SO1. Contribute to the eradication of hunger, food insecurity and malnutrition;
SO2. Increase and improve provision of goods and services from agriculture, forestry and fisheries in a sustainable manner;
SO3. Reduce rural poverty;
SO4. Enable more inclusive and efficient agricultural and food systems at local, national and international levels;
SO5. Increase the resilience of livelihoods to threats and crises.

1 The following countries and organizations contributed to the drafting and review of this statistical note: France, Germany, United Kingdom, United States of America, FAO, OECD
2. Conceptual and methodological tools

The collection and analysis of agricultural statistics has to the main part focused on agricultural productivity, food availability and structural statistics over the past century. Only in the recent past has attention started to be paid to the impact of agricultural production on the environment and the sustainability of agricultural activities.

The SEEA Central Framework adopted as international statistical standard by the United Nations Statistical Commission in 2012\(^2\) and the SEEA Experimental Ecosystem Accounting welcomed by the Statistical Commission as “an important first step in the development of a statistical framework for ecosystem accounting”\(^3\) now provide countries with the methodologies to collect and develop their agricultural statistics and be in a position to monitor and evaluate the economic and environmental dimensions of agriculture. Linkages with socio-demographic information can be established through the System of National Accounts and spatially disaggregated information to be compiled in the context of the SEEA Experimental Ecosystem Accounting. The FAO is developing an extension to the SEEA that captures the specific relationships between the agricultural sector and the natural environment - System of Environmental-Economic Accounting for Agriculture (SEEA-AGRI). Within this framework, agriculture is interpreted in the broad sense as all activities related to crops, livestock, forestry and fisheries with a primary and intensive use of natural resources. The SEEA-AGRI will provide the framework for analysis of the interactions between agriculture and the environment and the ability to monitor and evaluate sustainability issues. The 2008 System of National Accounts provides the internationally statistical standard for the economic dimensions of sustainability. The broader social aspects of sustainability have to be addressed by household surveys, administrative sources such as those related to civil registration and vital statistics

3 Existing and new indicators

Within the current MDG framework sustainability is monitored under Goal 7 (Ensure environmental sustainability). Among the weaknesses of this set that have been pointed out are the lack of integration of the dimensions of sustainable development and the lack of inclusion of indicators addressing the necessary enabling conditions (including governance mechanisms, financing and capacity development).

The FAO has been working closely with the OECD and Eurostat in the development and convergence of agri-environmental statistics and indicators. The work with EUROSTAT and OECD has led to the development of a new Agri-Environmental dataset in FAOSTAT, which draws on data available in FAO and in part on the OECD database\(^4\). Moreover, some agri-environmental indicators such as nutrient

---

\(^3\) Statistical Commission – Report on the forty-fourth session (26 February-1 March 2013)  
http://faostat.fao.org/site/674/default.aspx
balances\textsuperscript{5} are available only in the OECD data base and not in FAO, due to data limitation beyond the OECD member countries. These agri-environmental indicators were developed with a focus on developed country agri-environmental policy issues and need to be reviewed regarding their relevance to developing countries agri-environmental policy issues. The FAO is also using the following “dashboard” of indicators as a starting point to measuring and monitoring FAO’s Strategic Objective 2 “Increase and improve provision of goods and services from agriculture, forestry and fisheries in a sustainable manner.” This “dashboard” approach is being used as it is recognised that there are no one or two indicators that measure the necessary statistical dimensions of sustainable agriculture adequately. By way of example, a dashboard is presented below that comprises indicators that are already in existence and can be used to contrast increases agricultural production against sustainability trends, e.g. loss in forest area. Existing indicators on social injustice, equality and governance can also be added.

A. Production and growth:
1. Crops, net per capita production index number (including fibre)
2. Livestock net per capita production index number
3. Fish production per capita (tonne/cap) (both capture and aquaculture)
4. Round-wood production per capita (m3/cap)

B. Productivity:
5. Agriculture value-added per worker (constant 2,000 USD)
6. Cereals yield (hg/ha)
7. Growth in calories and protein produced per head of livestock
8. Growth in total factor productivity in agriculture\textsuperscript{6}

C. Sustainability:
9. Nutrient balances
10. Use of natural resources (like water, energy)
11. Food losses and food waste
12. Terrestrial Protected Areas
13. Proportion (%) of fish stocks within their safe biological limits
14. Forest area primarily designated for provision of environmental and social services
15. Forest area per annum growth (%)
16. GEF Benefits Index (GBI) for Biodiversity

4. Data requirements, challenges and limitations

The data requirements needed to produce the indicators to truly measure the sustainability of agriculture are substantial and currently not possible for many developing countries. This issue is being addressed by The Global Strategy to


\textsuperscript{6} http://www.oecd.org/tad/agricultural-policies/sustainableagriculturalproductivitygrowthandbridgingthegapforsmall-familyfarms.ht
Improve Agricultural and Rural Statistics which focuses on improving the agricultural statistics including the environmental aspects from a methodological, a country basic data and a capacity perspective.

Given the multi-dimensional and context-dependent nature of sustainability, it is difficult to conceive a single metric, other than troublesome composites, that expound the notion of sustainability in all its forms – thus the “dash board” approach. An integrated approach with a suite of indicators is consequently required, which takes stock of countries’ capacities and commitments as well as their level of development. In this regard, while global goals may help generate political will and resources, realities at the national level demand that targets be adapted to country conditions. Data at the national level are lacking in quantity and quality, but in any case often hide enormous disparities within borders. Therefore, geospatial data would play an important role in identifying and monitoring national environmental “hotspots” and for policy targeting such as areas affected by water scarcity, land degradation and biodiversity loss. With the increasing use of geospatial data for environmental-economic accounting, methodological cooperation between countries is important for the formulation of comparable indicators.

5. Conclusions

There is growing recognition, as evidenced by the proposals for goals and targets in the area of sustainable agriculture and sustainable food systems, of the need to address this subject in the SDGs and to articulate the linkages between this subject and key development issues such as food security and nutrition, poverty reduction, gender equity, also taking into account the water-energy-food-ecosystems nexus.

The System of National Accounts and the System of Environmental-Economic Accounting provide the internationally agreed statistical standards for measuring economic, environment and socio-demographic dimensions of sustainable agriculture in combination with household surveys and administrative sources. Major global initiatives are underway to strengthen the statistical capacity under the Global Strategy to Improve Agricultural and Rural Statistics, and the Implementation Programme of the 2008 SNA and SEEA 2012 that target the improvements of the institutional arrangements, the statistical infrastructure and operations from basic statistics to macroeconomic and environmental statistics in support of indicators on sustainable agriculture. These strategies are being tailored at the country levels so as to be able to inform agricultural sustainability policy issues at country level.

The informative value of all indicators is directly related to the underlying quantity and quality of data. Therefore further capacity development efforts are required to ensure that the most critical aspects of sustainable agriculture can be measured in all countries.

References

FAO, FAOSTAT: http://faostat.fao.org/site/674/default.aspx
FAO, Forest Resources Assessment: ¹ http://www.fao.org/forestry/fra/
UNSD, SEEA: http://unstats.un.org/unsd/envaccounting/seearev/