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Agricultural statistics in the era of Sustainable Development Goals (SDG'S) [1]

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ABSTRACT

This paper deals with measurement of SGD's related to agriculture. It shows the variety of SGD indicators which are or can be related to agriculture and rural development. It briefly looks at a set of National Strategies for Development of Statistics (NSDS) to see how well improvement in agricultural statistics are covered in the documents. It also analyses how open are data on agriculture as measured by the Open Data Inventory (ODIN) conducted by Open Data Watch (ODW). Lastly it looks at the issues of financing statistics in the era of SDG's and the ongoing data revolution.

Keywords: Data OpennessFinancing Statistics

PAPER

1. Indicators to Measure SDG's

The era of Millennium Development Goals ended in 2015 and the World embraced new targets which will guide policy makers over the next 15 years. With the creation of the SDG's and the accompanying data revolution statistics havebecome even more important. While the achievement of the SDG's will make the world a better place to live, measureable indicators are imperative to know whether or not such goals are achieved. In this paper we look at the SDG's and indicators which relate to agriculture, rural development and food security. Among the 17 SDGs, there are 11 goals, 45 targets, and 58 indicators relating to agriculture. Goal 2 to End Hunger, Achieve Food Security, Improved Food Nutrition, and Promote Sustainable Agriculture appears to be the main goal covering agriculture. It contains targets for increasing agricultural productivity, diversity, and investment. However, there are additional goals that include targets and indicators that measure agriculture or other elements that impact agriculture. Goal 12 on Responsible Consumption and Production, Goal 14 on Life Below Water, and Goal 15 on Life on Land include targets directly related to agriculture, focusing on food waste, fisheries, and use of genetic resources. These goals also include targets with an indirect relationship to agriculture, measuring nutrition, pollution, consumption of natural resources, marine conservation, and protecting terrestrial ecosystems. Goal 6 on Clean Water and Sanitation, Goal 9 on Industry, Innovation, and Infrastructure and Goal 13 on Climate Action also include such targets, focusing on water management, resilient infrastructure, and climate change resilience. In total, within Goals 2, 12, 14, and 15 there are 11 targets with 15 indicators directly related to agriculture and within Goals 2, 6, 9, and 12-15, there are 34 targets with 43 indicators indirectly related to agriculture.

Goal 2 (End hunger, achieve food security and improved nutrition and promote sustainable agriculture) includes five targets with nine relevant indicators that directly relate to agriculture.

Indirectly, Goal 2 includes three targets with five indicators. These indirect targets are important to agriculture as they serve as proxies for the effects of successful agricultural production. For example, although Goal 6 (Ensure access to water and sanitation for all) does not relate directly to agriculture, water resources are a crucial component of agricultural production. Goal 6 includes six targets with nine relevant indicators. Likewise,while Goal 9 (Build resilient infrastructure, promote sustainable industrialization and foster innovation) does not directly track agriculture, resilient infrastructure and control of CO2 emissions are important to agricultural production. Goal 9 includes two targets with three relevant indicators. Goal 12 (Ensure sustainable consumption and production patterns) includes one target and one indicator directly related to agricultural production. Indirectly, Goal 12 has two targets and three indicators on managing natural resources and pollution as proper management of natural resources and reduction of pollution both have significant impacts on agriculture. Although Goal 13 (Take urgent action to combat climate change and its impacts) includes targets and indicators that do not directly measure agriculture, efforts to mitigate climate change and increase resilience have a strong

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impact on agriculture as well. Goal 13 has four targets and four relevant indicators that relate to climate change mitigation and resilience. Goal 14 (Conserve and sustainably use the oceans, seas and marine resources) includes four targets and their four indicators directly related to agriculture in terms of fishing. Indirectly, Goal 14 has six targets and six indicators with impacts on agriculture related to fishing.

Indirectly, Goal 14 has six targets and six indicators with impacts on agriculture related to fishing. Marine conservation efforts are crucial to sustainable fishing activities. Goal 15 (Sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss) includes one target with a direct relationship to agriculture. This target focuses on fair and equitable sharing of the benefits of genetic resources in relation to plants and fauna.

As displayed by this list above, many of the Goals and measurable indicators are related to agricultural statistics.

2. Coverage of Agricultural Statistics in NSDS

Recently ODWconducted an assessment on how well National Strategies for Development of Statistics (NSDSs) adhere to guidelines from the Partnership in Statistics for Development in the 21st Century (PARIS21) where importance of sectoral statistics is prominent. As part of this project, ODW gathered 23 NSDSs of 20 countries and assessed the degree to which the NSDSs incorporate agricultural statistics. The results vary. Of the 23 assessments, fewer than ten NSDSs thoroughly detailed agricultural statisticsas a strategic task within its sectoral statistics. For example, Botswana's NSDS for 2015-2020 provided a subsection on agricultural statistics, consisting of current challenges, objectives, and priority initiatives as well as its total budget to address these challenges, objectives and initiatives. Additionally, Lao PDR's NSDS provides a working program on agricultural statistics within its objectives of increasing the development of sectoral statistics.Over ten NSDSs provided some references to agricultural statistics. For example, Benin's NSDS for 2014-2016 has a subsection on the current state of agricultural statistics, rather than a subsection on strategies for enhancing agricultural statistics. Furthermore, Macedonia's NSDSs, consisting of three publications for years 2014-2016, 2015-2017, and 2016-2018, do not address agricultural statistics as a detailed strategic task, but rather, elements of agricultural statistics are highlighted as an already-accomplished task.For other countries, the presence of agricultural statistics remains absent. For example, the NSDSs of the Dominican Republic (2014-2017), New Zealand (2010-2020), and Palestine (2014-2018) do not incorporate agricultural statistics. This brief assessment demonstrates that the coverage of agricultural statistics is uneven in the NSDSs. With the increasing demand for data on agriculture and rural development as per SDG indicators the future NSDSs will have to demonstrate actions for improvement in this sector more prominently.

3. Agricultural Statistics in ODIN

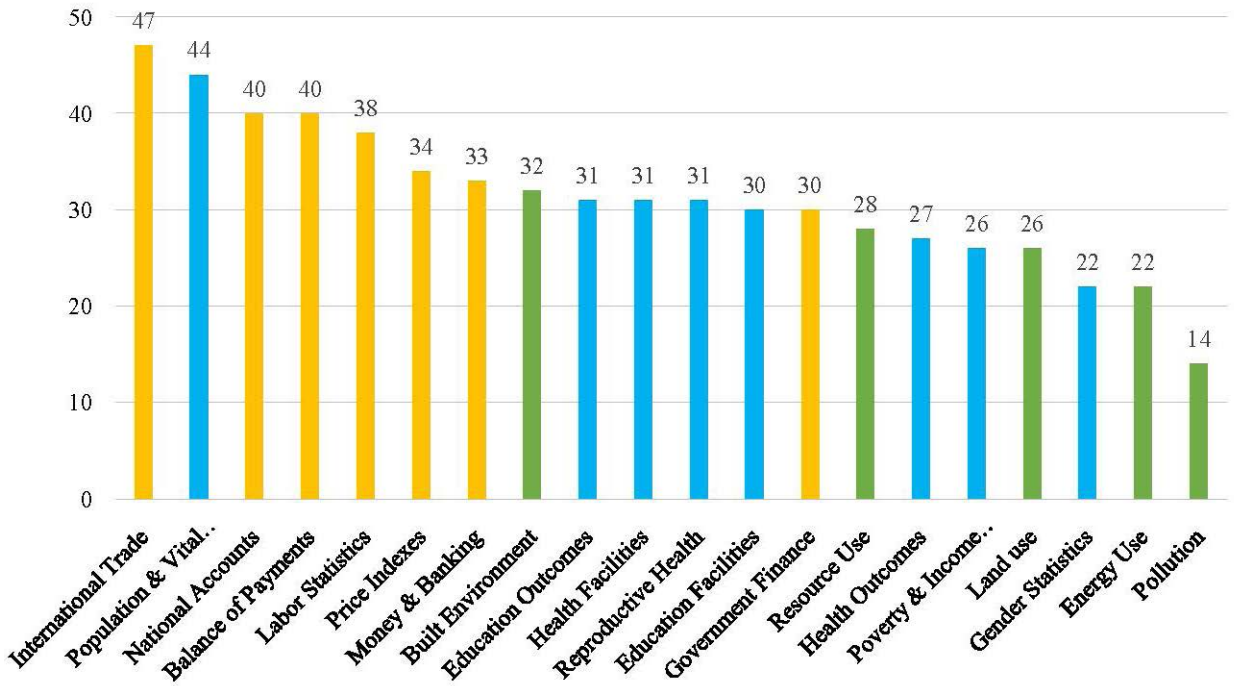
It is not only important to plan for improvement of statistics and to collect and process data but to publish data as open as possible. We would like to demonstrate how agricultural data are being open in countries around the world. ODIN is an assessment conducted by ODW of the coverage and openness of data provided on the websites maintained by national statistical offices (NSOs). In 2015, ODIN assessed the coverage and openness of official statistics in 125 mostly low- and middle-income countries across 20 statistical categories, two of which relate directly to agricultural statistics: Land Use and Resource Use.Both of these categories were assessed on five elements of coverage and five elements of openness. Each category is made up of a set of indicators. The indicator that comprises the category Land Use is: land area, and the indicators within the category Resource Use are: fishery harvests, forest coverage and deforestation, water supply and use, and major mining activities. The overall ODIN score for each category is an indicator of how complete and open an NSO's data offerings are.

The following is a summary of the global and regional trends in agricultural statistics that emerged from ODIN 2015, as well as two unique examples that illustrate different scenarios on each side of the spectrum.The average score for the 125 countries in the category Land Use is 26 percent and the average score for the category Resource Use is slightly higher at 28 percent (Table 1). In general, ODIN assessments found that environmental categories (which include Land Use and Resource Use) score among the lowest compared to economic and social data categories.

In addition, openness subscores for the categories Land Use and Resource Use tend to be lower than other categories with median scores of 10 and 20 percent. However, this trend is less specific to agricultural data as no data category received a median openness score upwards of 30 percent.

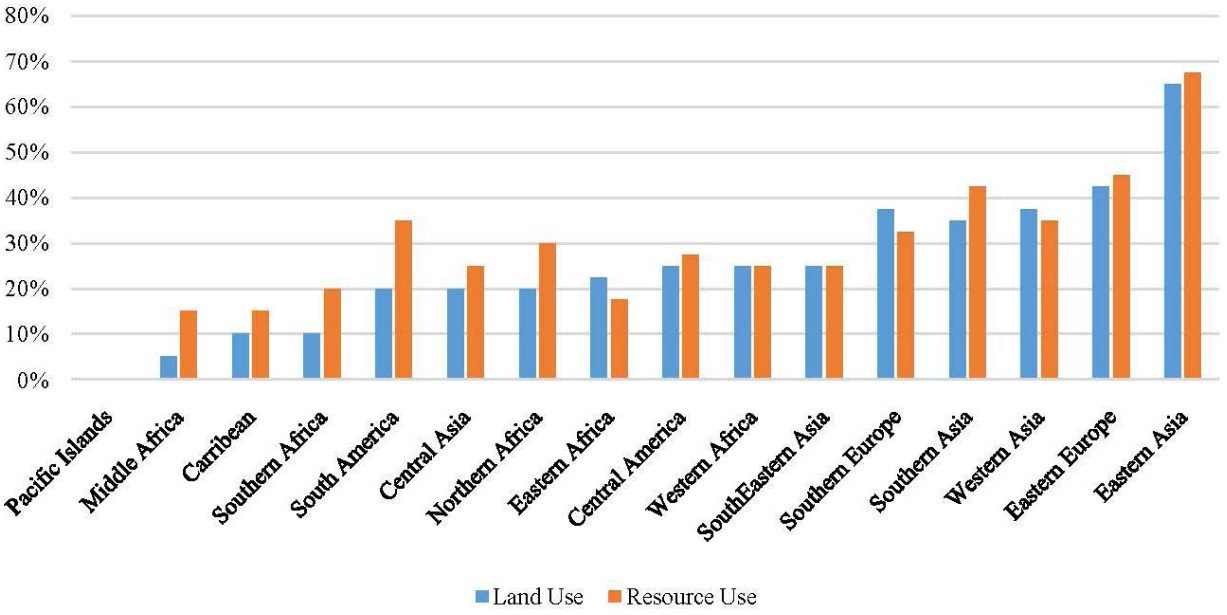
Across the 16 regions which ODIN spans, there is great disparity between ODIN scores within the categories Land Use and Resource Use. Looking at median scores between regions, the Pacific Islands received a median score of 0 percent across both categories. On the other end of the spectrum is Eastern Asia which scored 65 percent in Land Use and 68 percent in Resource Use (Table 2).

Table 1 - Average ODIN Scores by Data Category



Despite the great score variations between regions, the overall trend shows that the coverage and openness of agricultural data is often neglected. Thirteen of the 15 regions did not score over 40 percent in either agricultural data category and eight of those countries did not score over 25 percent in either category. The poorest performing regions in agricultural data include: The Pacific Islands, the Caribbean, all regions of Africa except Northern Africa, and Central and SouthEastern Asia. The highest performing regions include: Eastern Asia and Eastern Europe. Vietnam, showcases how agricultural statistics can be prioritized in a country's national statistical system. Vietnam is the only country included in ODIN 2015 assessments where the agricultural categories Land Use and Resource Use scored the highest out of all social, economic, and environmental categories. In the category Land Use, Vietnam scored 80 percent and in Resource Use they

Table 2 - Median ODIN Scores for Agricultural Data Categories by Region

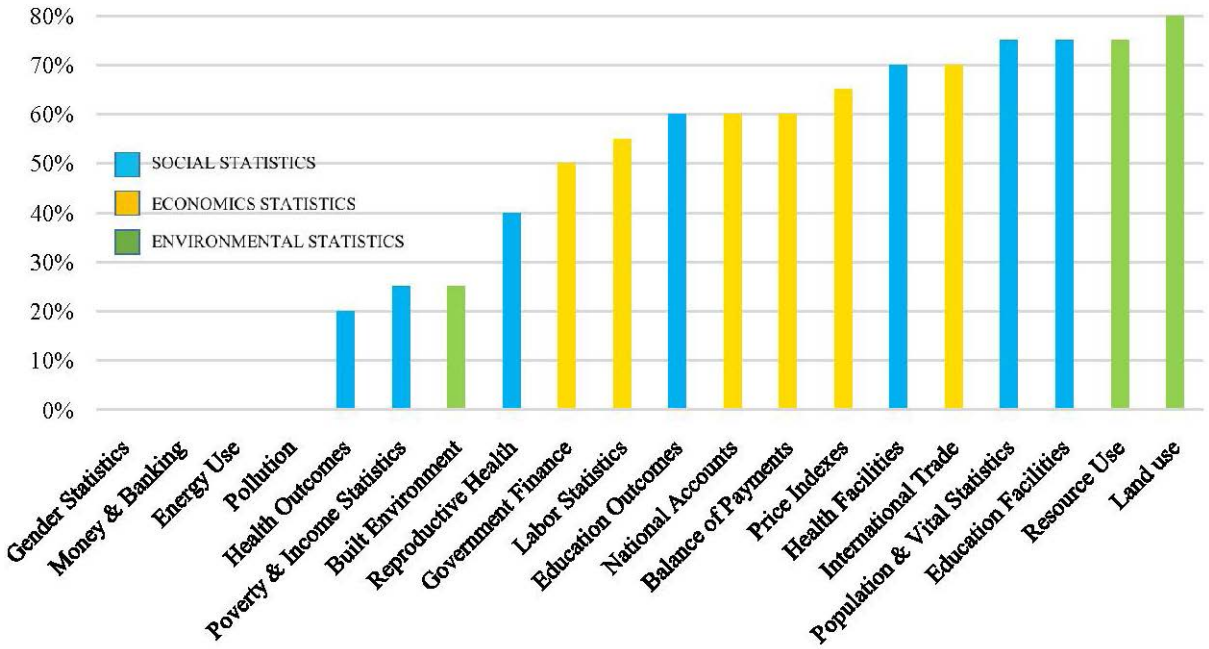


received a score of 75 percent (Table 3).

The country's national statistical office, General Statistics Office of Vietnam, hosts an interactive data portal in which users can select a number of agricultural indicators under the categories "Administrative Unit, Land and Climate" and "Agriculture, Forestry and Fishery" to download, often displaying data over 10 years old and at multiple administration levels.

Though the country scores highly in two of the lowest scoring categories across all countries, their overall ODIN rank is 15th place, partly because data in four out of 20 data categories is not made

Table 3 - ODIN Scores for All Data Categories for Vietnam



available. Nonetheless the country is an excellent case of how agricultural statistics can and should be made available to users.

According to ODIN assessments, agricultural and other environmental data are currently a low priority in many national statistics systems across all regions and particularly in comparison with social and economic data. While certain countries provide exceptions such as in Eastern Asia (China and Mongolia) and Vietnam, there is still room for improvements, especially in regards to the openness of such data.

4. Financing Measurement of SDG's

In the Marrakesh Action Plan in 2004 the international community costed out six actions needed to measure the achievement of MDG's. A similar exercise was done recently to see how much measurement of SDG's will require additional resources (SDSN,2015). The "Data for Development: A Needs Assessment for SDG Monitoring and Statistical Capacity Development" looked through the sources of data needed to cover the SDG's which includes census data, household surveys, agricultural surveys, administrative data, civil registration and vital statistics, economic statistics, including laborforce and establishment surveys, and trade statistics, geospatial data and other environmental data. The annual needs estimate for 77 IDA countries are between 902 and 941 million USD. The report compares the need assessment with the data provided by Paris21 (PRESS 2013) and other sources and come up with the annual gap in official development assistance (ODA) between 100 and 200 million USD. In 2016 two new reports, The State of Sustainable Development Data Funding (SDDF) and

PARIS21's Partner Report on Support to Statistics (PRESS 2016), review the financing of statistics in developing countries. These reports provide valuable information on the status of development data funding and propose concrete actions to increase and sustain funding for measuring the SDGs. They show that the financing needs for statistics are far greater than currently mobilized funding. According to the SDDF report, the total estimated annual costs for producing SDG data is $2.8 billion and $3.0 billion while the total estimated annual aid to support the production of SDG indicators is $635 to $685 million. This total cost is for 77 IDA-eligible and 67 IRBD countries. Based on current funding levels for statistics and data, an annual increase in aid of $350 to $400 million will be needed to support the production of SDG indicators.
An inventory of instruments used to finance statistics (ODW, 2016) looks at the ecosystem of aid for statistics. The study looks at the financing instruments such as loans, trust funds, technical

assistance provided financed with trust funds and other relevant instruments. The 2016 report contains expanded coverage from the 2015 report to include of multilateral development banks, intergovernmental organizations, bilateral donors, and private foundations. The major instruments used to finance agricultural statistics in this report are the Global Trust Fund for the Global Strategy to Improve Agricultural and Rural Statistics (GAO) managed by the Food and Agriculture Organization of the United Nations, a similar trust fund for Africa managed by African Development Bank, Living Standard Measurement Program managed by the World Bank, and Global Open Data Agriculture and Nutrition. The estimated annual value for agricultural statistics reported by participants in the 2016 survey was approximately $32.5 million USD. Of course the support for agricultural statistics is not fully captured by these trust funds and deeper analysis is needed as to come up with more precise estimates. The fact that the ODA gap to support statistics is quite sizable and the agricultural statistics cover many SGD indicators calls for a sizable increase in financing of agricultural statistics.

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