Statistical Journal of the IAOS 38 (2022) 57–62
DOI 10.3233/SJI-220933
IOS Press

Guest Editorial

Closing the data gap in agriculture through sustainable investment in the data value chain: Realizing the vision of the 50x2030 Initiative

Alberto Zezza, Sydney Gourlay and Vasco Molini
Development Data Group, The World Bank

This special section introduces to the SJIAOS readership the work of the 50x2030 Initiative to close the agricultural data gap, a multi-partner program that addresses current shortcomings in the quality and availability of agricultural data by transforming country data systems in 50 countries in Africa, Asia, the Middle East and Latin America by 2030. That motivation comes from the need to address documented, persisting gaps in agricultural statistics in low- and lower-middle income countries.

Recent assessment by FAO on the ability of countries to report on agricultural SDG indicators, for instance, have concluded that only 50 percent of African countries publish indicators 2.1.1 and 15.1.1[1] and reporting rates on the other agricultural SDG indicators are less than 30 percent [1]. Similarly, in Asia only slightly more than 50 percent of counties report that indicators 15.1.1, 2.1.1 and 5.a.1 are currently published in national or international databases, while reporting rates on most of the other indicators are less than 40 percent [2]. This lack of good quality and recent data, which is essential for timely, targeted policy action, is also a manifestation of a deeper problem: many low- and lower-middle income countries do not have well-functioning data systems to generate and use the data needed to make improved programmatic investments and policy decisions. Many of these countries have identified survey data as a priority area for receiving technical and financial assistance to strengthen their capacity and knowledge to develop and support a comprehensive, sustainable system of data production and use. One tenet of the initiative is that producing good data that improve decision-making can create the demand for data that will ensure sustained investment in statistics by national governments.

The Initiative follows in the footsteps of and builds on other international initiatives that since the early 2000s have been motivated by the realization that "many countries, especially in the developing world, lack the capacity to produce and report even the minimum set of agricultural data necessary to monitor national trends or inform the international development debate" [3]. That realization, coupled with the data demands linked to the need to inform a policy response to the 2007–2008 food prices crisis, triggered a renewed interest and urgency at least in some countries, donors, and multilateral organizations to mobilize resources to reverse a trend of neglect for agricultural statistics in developing regions.

The Living Standards Measurement Study – Integrated Survey on Agriculture (LSMS-ISA) was launched in 2008 by the World Bank to design and implement systems of multi-topic, nationally representa-

[1] SDG Indicator 2.1.1 measures the "Prevalence of undernourishment", and falls under SDG Goal 2 to "End hunger, achieve food security and improved nutrition and promote sustainable agriculture". SDG Indicator 15.1.1 is the "Forest area as a percentage of total land area", which falls under SDG Goal 15 that 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".

tive panel household surveys with a strong focus on agriculture in eight partner countries in Sub-Saharan Africa. The primary objective of that program has been to foster innovation and efficiency in statistical research on the links between agriculture and poverty reduction in the region.[2] That program was instrumental in changing the face of agricultural data availability in the African countries where it operated, with spillovers to other countries in the region and beyond, particularly in terms of pushing the methodological frontier for agricultural survey data collection.

The Global Strategy on Agricultural and Rural Statistics[3] was launched at about the same time to provide a blueprint for coordinated international action to counteract the decline in the quality of agricultural statistics, by offering a framework for action, identifying a minimum set of core data for countries to prioritize the production of, and promoting the integration of agricultural statistics into national systems, all supported by a capacity building effort and a global research program to develop and promote the adoption of cost effective agricultural data collection methods. One of the outputs of the Global Strategy was the development of the AGRISurvey methodology, which combines an annual core module on production that is collected every year and several rotating modules collected periodically [4].

The 50x2030 Initiative builds on the work of LSMS-ISA and AGRISurvey programs and addresses data needs and builds capacities across all components of the data cycle. Starting with data prioritization, both programs and now the 50x2030 Initiative help partner countries assess their agricultural data needs to ensure surveys will produce the most critical data for policy and investment decision-making and reporting needs. Second, the programs focus on data production – the costliest stage – including developing questionnaires in line with best practices, selecting the sample, training enumerators and supervisors, and collecting data, typically through computer-assisted personal interviews (CAPI). Once data are collected, the programs support partner nations to clean, edit, format, and prepare data for use during the data curation phase. Once ready, a considerable amount of technical support is provided to support data analysis and interpretation. Many partner countries need and demand support to analyze and understand the data they have collected. To encourage sustainability and maximize impact, the Initiative includes and prioritizes activities that promote data use. The inclusion of a data use objective recognizes that supply-side efforts focused on data production alone are unlikely to increase evidence use in decision-making.

Partner countries contribute financial resources to the survey programs in their respective countries from the start and increase those contributions over the years, with the objective of taking over the survey program and implementing it independently. As a sizable portion of the national contributions is expected to come from a country's planned program budget, the Initiative, through the World Bank, will advocate for the mobilization of resources from the national budget as well as for the use of International Development Association (IDA)/International Bank for Reconstruction and Development (IBRD) resources in support of agricultural data, in line with the objective of the Initiative and the World Bank's commitment to the data agenda. While not meant to be a substitute for contributions from national budgets, IDA/IBRD allocations may provide complementary resources to support the launch or rapid scale-up of the program.

This Special Section highlights some key elements of the 50x2030 approach, drawing on work that is being undertaken under each of its three components: Methods and Tools (managed by the World Bank), Data Production (managed by FAO) and Data Use (managed by IFAD).[4] The papers in the Special Section offer early insights from what is a story still in development, given the Initiative only started formally in July 2019 and has a time horizon, as per the program name, of 2030. They are shared here with a global readership interested in official statistics to promote awareness of the Initiative, to garner support (both intellectual and operational) from members of the global statistical community who share the same goals, and to solicit feedback and inputs, including critical ones, that can help improve the way the Initiative operates and make it more efficient, effective and impactful. A full list of 50x2030 publications preceding this Special Section is available in the Appendix to this editorial.

[2] https://www.worldbank.org/en/programs/lsms/initiatives/lsms-ISA.

[3] https://www.fao.org/policy-support/tools-and-publications/resources-details/en/c/1258797/.

[4] The 50x2030 Initiative is implemented through a unique partnership between the World Bank, Food and Agriculture Organization of the United Nations (FAO) and the International Fund for Agricultural Development (IFAD). With strategic oversight from a Partnership Council, and direct coordination by a Program Management Team, these agencies jointly support country partners in meeting the objectives of the Initiative.

The articles in this Special Section

The Section starts with an overview of the Initiative authored by members of its Program Management Team, the unit based at the World Bank that coordinates implementation and leads the engagement with countries, donors and other stakeholders including in the private sector. The paper by Villarino et al. *(From agricultural statistics to zero hunger: How the 50x2030 Initiative is closing data gaps for SDG2 and beyond)* presents the vision of the Initiative and its implementation principles, and discusses how its different components work together to implement that vision, and outlines some of the early impacts in selected countries where the Initiative has started operating. The paper sets the stage for the rest of the Special Section.

The other six papers in the Section focus on a diverse set of contributions the Initiative is making to strengthen agricultural data systems in participating countries. That includes addressing priority data needs, promoting innovative sampling approaches to facilitate data integration, developing and testing methods for producing quality data for important policy variables, working with national statistical offices to enhance the synergies across different survey programs, to diagnosing and encouraging opportunities for greater data use and impact.

The paper by Bolliger et al. (*The 50x2030 Initiative and production of SDG 2 indicators: Country challenges and experiences*) shows the potential for 50x2030 to help fill the gaps in the production of SDG2 indicators,[5] in many ways the paramount indicators for agriculture. The paper shows how 50x2030 built on the efforts of previous initiatives, namely the AGRISurvey program at FAO, to scale up innovations developed under previous programs to achieve sustainable impact. The paper also highlights some key challenges (including outstanding ones) that countries are facing at different stages from data collection to indicator computation and how the Initiative is working with countries to address those challenges.

An adequate sampling approach is of course a prerequisite for any successful survey operation. Bako et al. *(Integrated sampling design for agricultural and socio-economic households' surveys: A cost-effective approach for agricultural and rural statistics)* present the 50x2030 approach to sampling, with particular respect to how to effectively integrate data collection operations that are normally carried out in parallel for agricultural production and for household surveys. In some countries it might be possible to pursue cost efficiencies while enhancing data interoperability via a purposely designed sampling approach. The paper presents the concepts and the theory behind the proposed approach, and how this is being implemented in practice by the Uganda Bureau of Statistics (UBOS). This experience is somewhat paradigmatic of the 50x2030 philosophy in that methodological advances are developed in close collaboration with survey operations, in order to enhance data usability and impact. The program attempts to push the frontier, while also translating any advances into practical knowledge as well as in knowledge public goods that can inform other countries and survey operations that are working towards similar goals.

The papers by Brunelli and Gourlay (*Individual land rights – Filling data gaps with the 50x2030 Initiative*) and by Rühl et al. *(Combining farm and household surveys with modelling approaches to improve post-harvest loss estimates and reduce data collection costs)* are moved by a very similar motivation, in that they show how 50x2030 is combining the attention to methodological development with survey practice to promote the adoption of scalable methods for the production of data for the monitoring of SDGs. In particular the two papers focus on SDG indictor 5.a.1 on security of land tenure (Brunelli and Gourlay) and 12.3.1.a on reducing food losses (Rühl et al.). The former paper is an example of how the Initiative works to incorporate recent methodological developments that predate the Initiative in the survey instruments adopted and promoted by the Initiative so that these innovations can make a difference at scale, and become an integral part of the recurrent survey practice of national statistical systems. The paper by Rühl et al. shows how the Initiative is also working to further previous methodological work by conducting more validation and further contributing to survey methods advances while keeping in mind the constraints low-resourced national statistical systems are operating in. These are just two examples of a much broader methodological agenda 50x2030 is contributing to and that is being developed in consultation with partners in the global statistical community, from NSOs, multilateral agencies, data users and academia.

The paper by Ponzini et al. *(The integration of socioeconomic and agricultural surveys in the national statistical system: Th case of the Uganda Bureau of Statistics)* weaves together many of the above threads as it recounts how the 50x2030 program is making strides in Uganda, where it is pioneering an innovative approach

[5] SDG2 aims to "End hunger, achieve food security and improved nutrition and promote sustainable agriculture".

to integrating pre-existing multi-topic and agricultural sample surveys which had been for a few years receiving support respectively from the LSMS-ISA and the AGRISurvey program. The article relates the progress made with that integration at different levels, from integrating part of the sample, adopting similar methods for data collection, to overcoming institutional barriers both within different parts of the national statistical system, as well as across external organizations that are now coordinating much more closely their support to UBOS. Importantly, the paper shows how Uganda is reaping the benefits of the approach in terms of cost effectiveness of the operations, as well as by being able to avoid a situation in which different surveys would be producing different estimates that needed to be reconciled ex post, thus providing a service to both the taxpayers and data users.

The final paper in the Section by Winters et al. *(Facilitating data use for decisionmaking: 50x2030's approach)* describes how the Initiative is integrating concerns about promoting data use from the onset, whereas these have often been an afterthought in national and international programs focusing on the design of surveys or of other data collection operations. The paper describes the approach the Initiative is taking in countries to map the data ecosystem, to strategically target interventions to maximize data use and impact by identifying and mobilizing data users early in the process, and presents results and outstanding challenges from the first countries in which the approach is being used.

We trust the SJIAOS readership will find this set of papers of interest in several ways. First, they provide a glimpse into the working of an ambitious initiative that is aiming to transform the agricultural data landscape across low- and lower-middle income countries, which are those where agriculture is generally more important for the economy at large and for the livelihoods of the poor in particular, and where technical and financial support needs for statistical operations the greatest and most urgent [5]. Second, the papers present important insights in their own right, which are of interest for survey practitioners beyond the countries that are participating in the Initiative. The innovations in sampling, data collection and modelling, data use mapping, and integration across national survey programs that are discussed in the Section are of general relevance for official statisticians and others involved in designing or implementing agricultural and rural surveys. Last but not least, with publishing this Section we aim to stimulate a discussion around the 50x2030 Initiative and its approach to technical and financial assistance and to data production, the innovative methodological agenda it is pursuing, and its systematic efforts to promote data use for impact. We hope the Section will motivate readers to get involved with the Initiative and help it achieve its goal of transforming agricultural data-informed policy in low- and lower-middle income countries, whether it is by engaging directly with the Initiative as producers or users of statistics, or by contributing to an intellectual debate that can nurture the innovative nature and relevance of an initiative that aims to produce tangible change and contribute to the realization of the Sustainable Development Agenda through more and better data.

References

[1] FAO. Statistical Capacity of African countries to monitor the FAO relevant SDG indicators: the results of the SDG Gap Assessment survey, RAF-AFCAS-19-E-41-SDG-FAO. 2019.
[2] FAO. Statistical Capacity of Asian countries to monitor the FAO-relevant SDG indicators: the results of the SDG Gap Assessment survey, (APCAS/20/4.2). 2020.
[3] World Bank, FAO, and UN. Global Strategy to Improve Agricultural and Rural Statistics, Report No. 56719-GLB. Washington; 2010. Available from: https://openknowledge.worldbank.org/bitstream/handle/10986/12402/567190ESW0P119000AgStatistics100web.pdf?sequence=1&isAllowed=y.
[4] FAO. Handbook on the Agricultural Integrated Survey (AGRIS). 2018.
[5] World Bank, UNSD and Paris21, *Survey on the Implementation of the Cape Town Global Action Plan*. Washington, D.C.: World Bank Group. 2022.

Appendix. Publications of the 50x2030 Initiative

In addition to the papers published in this Special Section of the SJIAOS, the following research papers, technical papers, guidance notes, and other documents have been published by, or with support from, the 50x2030 Initiative (as of January 2022). Additionally, several questionnaire instruments have been published on the 50x2030 website (www.50x2030.org/resources/survey-instruments).

Papers

Abay K, Barrett C, Kilic T, Moylan H, Ilukor J, Drazi Vundru W. Nonclassical Measurement Error and Farmers'Response to Information Reveal Behavioral Anomalies. 50x2030 Working Paper Series. 2022.

Also published as:

Abay K, Barrett C, Kilic T, Moylan H, Ilukor J, Drazi Vundru W. Nonclassical Measurement Error and Farmers'Response to Information Reveal Behavioral Anomalies. World Bank Policy Research Working Paper. World Bank, Washington, DC; 2022.

Azzari G, Jain S, Jeffries G, Kilic T, Murray S. Understanding the Requirements for Surveys to Support Satellite-Based Crop Type Mapping: Evidence from Sub-Saharan Africa. Remote Sensing. 2021; 13(23):4749.

Also published as:
Azzari G, Jain S, Jeffries G, Kilic T, Murray S. Understanding the Requirements for Surveys to Support Satellite-Based Crop Type Mapping: Evidence from Sub-Saharan Africa. 50x2030 Working Paper Series. 2021. Available from: https://www.50x2030.org/sites/default/files/resources/documents/2021-09/Understanding%20the%20Requirements%20for%20Surveys%20to%20Support%20Satellite-Based%20Crop%20Type%20Mapping%20WP%20Version%201%20April.pdf
Azzari G, Jain S, Jeffries G, Kilic T, Murray S. Understanding the Requirements for Surveys to Support Satellite-Based Crop Type Mapping: Evidence from Sub-Saharan Africa. World Bank Policy Research Working Paper; No. 9609. World Bank, Washington, DC; 2021.

Gourlay S, Maggio G, Safyan A, Zezza A. Measuring Land Tenure at the Individual Level: Lessons from Methodological Research in Armenia. 50x2030 Working Paper Series. 2022.

Also published as:
Gourlay S, Maggio G, Safyan A, Zezza A. Measuring Land Tenure at the Individual Level: Lessons from Methodological Research in Armenia. World Bank Policy Research Working Paper. World Bank, Washington, DC; 2022.

Mayienga S, Cachia F. Research on the Measurement of Post-Harvest Losses – Minimum Losses by Commodity and Region: Insights from the Literature. 50x2030 Working Paper Series. 2021. Available from: https://www.50x2030.org/sites/default/files/resources/documents/2021-09/Minimum%20losses%20WP_08062021%2050x2030%20WP%20version.pdf

Also published as:
Mayienga S, Cachia F. Research on the Measurement of Post-Harvest Losses – Minimum Losses by Commodity and Region: Insights from the Literature. FAO Statistics Working Paper 21/26. Rome; 2021.

Wollburg P, Tiberti M, Zezza A. Recall length and measurement error in agricultural surveys. Food Policy. 2021;1 00:102003.

Also published as:
Wollburg P, Tiberti M, Zezza A. Recall Length and Measurement Error in Agricultural Surveys. 50x2030 Working Paper Series. 2021. Available from: https://www.50x2030.org/sites/default/files/resources/documents/2021-09/Recall%20Length%20WP%2025%20Feb%202021.pdf
Wollburg P, Tiberti M, Zezza A. Recall Length and Measurement Error in Agricultural Surveys. World Bank Policy Research Working Paper; No. 9128. World Bank, Washington, DC; 2020.

Yacoubou Djima I, Kilic T. Survey Measurement Errors and the Assessment of the Relationship Between Yields and Inputs in Smallholder Farming Systems: Evidence from Mali. 50x2030 Working Paper Series. 2021. Available from: https://www.50x2030.org/sites/default/files/resources/documents/2021-11/YacoubouDjimaKilic%20WP%20FINAL%20%2B%20cover.pdf

Also published as:
Yacoubou Djima I, Kilic T. Survey Measurement Errors and the Assessment of the Relationship between Yields and Inputs in Smallholder Farming Systems: Evidence from Mali. World Bank Policy Research Working Paper; No. 9841. World Bank, Washington, DC; 2021.

Guidance Notes & Technical Documents

50x2030 Initiative. Technical Note on Non-Standard Units. 2021. Available from: https://www.50x2030.org/sites/default/files/resources/documents/2021-09/NoteOnNSU_FINAL.pdf

50x2030 Initiative. Technical Note on Post-Harvest Losses. 2021. Available from: https://www.50x2030.org/sites/default/files/resources/documents/2021-09/TechNoteOnPHL_final_rev.pdf

50x2030 Initiative. Producing, Using, Innovating: How 50x2030 is Closing the Agricultural Data Gap. 2021. Available from: https://www.50x2030.org/sites/default/files/resources/documents/2021-09/An%20Introduction

%20to%20the%2050x2030%20Initiative_14%20June%20COVER%20ACK_SG.pdf

50x2030 Initiative. A Guide to the 50x2030 Data Collection Approach: Questionnaire Design. 2021. Available from: https://www.50x2030.org/sites/default/files/resources/documents/2021-11/50x2030%20TECHNICAL%20PAPER%20SERIES%20%232_September21_clean.pdf

50x2030 Initiative. A Guide to 50x2030 Survey Tools and SDG Indicator 5.a.1: Measuring Gender Parity in Ownership and Tenure Rights Over Agricultural Land. 2021. Available from: https://www.50x2030.org/sites/default/files/resources/documents/2021-09/SDG%205a1%20in%2050x2030%20final%2010.08.2021.pdf

50x2030 Initiative. A Guide to Promoting Data Use Under the 50x2030 Initiative. 2021. Available from: https://www.50x2030.org/sites/default/files/resources/documents/2021-09/Methodological%20Guidance%20on%2050x2030%20Data%20Use%20Activities_Sept2021.pdf

50x2030 Initiative. A Guide to Sampling. 2021. Available from: https://www.50x2030.org/sites/default/files/resources/documents/2021-09/50x2030%20Sampling%20Strategy_14%20June%20COVER%20ACK_SG_tracked.pdf

Reports, Protocols & Work Plans

50x2030 Initiative. 50x2030 Soil Sessions: Strategizing to Improve Soil Health Data in Agricultural Surveys. Summary of Meetings. 2021. Available from: https://www.50x2030.org/sites/default/files/resources/documents/2021-12/50x2030_SoilSessions_Report.pdf

50x2030 Initiative. Annual Work Plan 2021-2022. 2021. Available from: https://www.50x2030.org/sites/default/files/resources/documents/2021-12/Work%20Plan%202021-22%20%20FINAL%20public_compressed.pdf

50x2030 Initiative. Delivering in Uncertain and Demanding Times. 50x2030 Annual Report 2020-2021. 2021. Available from: https://www.50x2030.org/sites/default/files/resources/documents/2021-11/Annual%20Report%202021%20FINAL%20compressed.pdf

50x2030 Initiative. Country Engagement Protocol. 2020. Available from: https://www.50x2030.org/sites/default/files/resources/documents/2021-09/CEP%20final%20public%20Sept%202021.pdf

50x2030 Initiative. Annual Work Plan 2020-2021. 2020. Available from: https://www.50x2030.org/sites/default/files/resources/documents/2020-11/Work%20Plan%20Design%20FINAL.pdf

50x2030 Initiative. 50x2030 Annual Report 2019-2020. 2020. Available from: https://www.50x2030.org/sites/default/files/resources/documents/2020-11/Annual%20Report%20FINAL%20Nov%202020_0.pdf

Blogs and Op Eds

Mohamedou E. Where are the women? Filling the gap in sex-disaggregated data in agriculture. Available from: https://data2x.org/where-are-the-women-filling-the-gap-in-sex-disaggregated-data-in-agriculture/

Kalibata A, Mohamedou E. A lack of basic agricultural data is holding African countries back. Available from: https://qz.com/africa/2001970/a-lack-of-basic-agricultural-data-holds-african-countries-back/