Technical assistance delivery model in agricultural statistics of the African Development Bank

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1. Introduction

The Africa Development Bank (AfDB), through its Statistics Department, is providing support to its Regional Member Countries (RMCs) on various agricultural statistics domains, within its Statistics Capacity Building (SCB) Program. The Bank engagement in this field effectively started with the implementation of the Africa Action Plan (2011-2018) of the Global Strategy to Improve Agricultural and Rural Statistics (GSARS). The key objectives of the Agricultural Statistics Program of the Bank are, *inter alia*, to build the capacity of its RMCs to generate timely and reliable data needed to inform national agricultural and rural development policies in Africa, as well as the Bank's Strategy for Agricultural Transformation in Africa (Feed Africa Initiative), SDGs, and Africa Agenda 2063, among others.

One of the constraints faced in formulating the Africa Action Plan of the GSARS and AfDB SCB Program in Agricultural Statistics was the lack of comprehensive and up-to-date quality information on countries' statistical capacity and needs, in order to: (i) establish baselines for setting targets and performance measurement, (ii) establish country profiles and effectively group and rank countries by level of capacity/development of their agricultural statistics systems, (iii) draw up a Technical Assistance (TA) delivery model for Africa as a whole and for each country, and (iv) establish a monitoring and evaluation system to assist in monitoring progress and guiding implementation of the Program. In order to feed into the assessment of the progress made in the implementation of the Africa Action Plan of the GSARS, a standardized tool code-named the Country Assessment (CA) was developed. The purpose of the tool was to objectively measure the ability of National Agricultural Statistics Systems (NASS) to produce the required agricultural data. Three CA cycles have been conducted so far, for the reference years of 2013 (for baseline information), 2015 (mid-term for monitoring purposes), and 2017 (the end of the implementation period of the Action Plan for Africa of the GSARS). These CAs collected the basic data used to generate a set of standardized indicators, viz. the Agriculture Statistics Capacity Indicators (ASCI), to track and reveal the evolution and performance of NASS capacity development. In fact, the indicators produced from these CA cycles revealed which countries were showing signs of improvement in their capacity to produce relevant agricultural statistics, as well as those exhibiting some weaknesses. These findings were essential in highlighting areas of underperformance in certain African countries, which were then targeted for assistance. They also helped to identify the high performers so that their systems and procedures could serve as best practices to be emulated by those countries showing slower progress. On the other hand, some countries used it to advocate for the development of their NASS capacity and mobilization for required resources, not only from development partners, but also from the government budget. The African Union Commission (AUC) has also included ASCI among key indicators for the Comprehensive African Agriculture Development Program (CAADP) biannual reviews that countries are expected to report on.

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The CAs have been supplemented by other surveys to continue identifying priority Technical Assistance (TA) needs for Improving Agricultural Statistics in African Countries. So far, such surveys have been conducted in 2014, 2019 and 2022, respectively. Findings from these surveys revealed the most popular TA needs that require urgent attention.

The TA Priority Needs Surveys were further supplemented by specific in-depth surveys for the most preferred areas for consideration in the TA program delivery. The results from all these surveys helped to inform plans for statistical capacity building program in agricultural statistics (namely the Bank Technical Assistance Delivery Model in Agricultural Statistics), in an efficient, cost-effective, and well-coordinated manner.

2. Some selected CA key findings - Overall status of Agricultural Statistics Capacity Indicators for the region

52 African countries participated in all the three CA rounds, with the exception of Eritrea and the Central African Republic. This is an excellent basis for any comparison of developments in the capacity of countries to produce the relevant agricultural statistics. The 4 standard dimensions used to objectively measure such development are explained in Box 1 below.

Box 1 - Dimensions of Agricultural Statistics Capacity

The Agricultural Statistics Capacity Indicators (ASCIs) cover the four dimensions of statistical activities, namely the Prerequisite, Input, Throughput, and Output to objectively assess a country's ability to produce agricultural statistics in a sustainable manner. Each dimension is further decomposed into a number of Elements, and related details as follows:

- ***Prerequisite Dimension (Institutional infrastructure)***: This dimension measures whether the foundations for the effective running of the National Agricultural Statistics System (NASS) in countries are in place. It is composed of five main elements: legal framework, coordination in the NSS, strategic vision and planning for agricultural statistics, integration of agriculture in the NSS, and relevance of data. These elements help to determine whether all the necessary factors are in place to effectively run an agricultural statistics system.
- ***Input Dimension (Resources)***: This dimension measures the ability of a country to allocate sufficient resources to carry out statistical activities. It is a combination of four elements: financial resources; human resources – staffing; human resources – training; and physical infrastructure.
- ***Throughput Dimension (Statistical Methods and Practices)***: This dimension covers the actual statistical work undertaken in National Statistical Systems (NSSs). It reflects each country's capacity to undertake statistical activities in a professional and cost-effective manner. It entails nine elements: statistical software capability; data collection technology; information technology infrastructure; adoption of international standards; general statistical activities; agricultural market and price information; agricultural surveys; analysis and use of data; and quality consciousness. These components show that this dimension fully measures the proficiency of a given NASS to carry out statistical work effectively.
- ***Output Dimension (Availability of Statistical Information)***: This dimension measures the availability of data and its level of accessibility by data users at both national and international levels for policy formulation and decision-making. It is comprised of four elements: core data availability, timeliness, overall data quality perception, and data accessibility. This focuses on the outputs from the statistical systems.

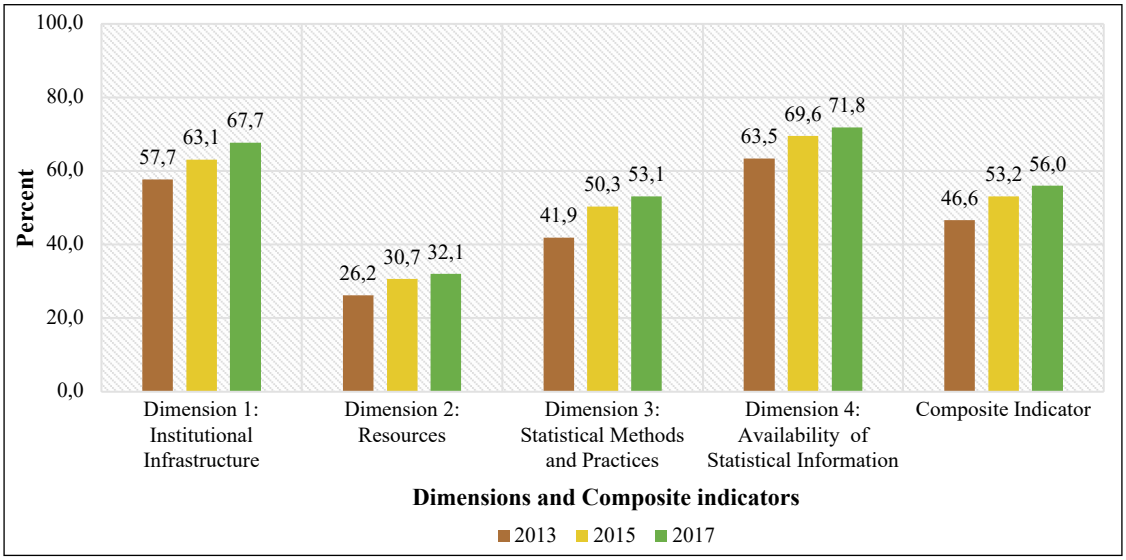
The above four dimensions are further aggregated into a ***Composite Indicator*** which, in turn, measures the general level of NASS development level as a whole.

The Africa ASCI Composite Indicator for the years 2013, 2015, and 2017 indicated a 9.4-point increase in the capacity to improve the quality and quantity of agricultural data (from 46.6% in 2013 to 56.0% in 2017). It also revealed the dimensions of NASS capacity that should be focused on to further improve its development, such as advocating for more relevant resources allocation to support agricultural statistics operations[1], and providing technical assistance on the adoption and use of cost-effective methods in undertaking agricultural surveys[2] (See Figure 1).

[1] *The term "resources" in this context includes not only finance, but also human resources (staffing and training) and the physical infrastructure to run an effective and efficient NASS.*

[2] *For more details, see the latest published report, at: https://www.afdb.org/en/documents/identification-priority-technical-assistance-needs-improving-agricultural-statistics-africa-countries. This report provides more details per dimension and country, showcasing low-performing countries as well as higher-level performers to improve their operational standards and meet the requirements of data users.*

Figure 1
Africa - Composite ASCI and Dimension scores 2013, 2015, and 2017



3. Identification of country priority needs for Technical Assistance

Based on the above findings, Technical Assistance (TA) for capacity building in agricultural statistics has become the main component of the Agricultural Statistics Program of the Bank. This is aimed at helping African countries to adopt and use more demand-driven cost-effective methods and procedures, which lead to the production of timely and accurate agriculture and rural statistics. This is usually preceded by a detailed assessment of a country's capacity and actual needs that require special attention. The identification of priorities and the proposed time for implementation by countries provide valuable information on which to plan an efficient and realistic TA program. At that end, a survey is conducted on agricultural statistics areas for which cost-effective methods are available to indicate their three top needs for TA in order of priority using a structured questionnaire (See Box 2 for more information on such survey questionnaire and how it is administrated).

Box 2 – Contents and administration of the TA Priority Needs Assessment Questionnaire

Actual country TA priority needs are identified by both National Statistical Offices (NSOs) and Ministries of Agriculture (MoAs), through consultation with all agricultural sub-sectors (crops, livestock, fisheries, forestry, environment and natural resources).

A list of single possible TA Priority Needs is proposed based on available newly developed cost-effective methods, as follows[3]:

- Developing Strategic plan for Agricultural and Rural Statistics (SPARS);
- Development of Administrative Data, including the Minimum Set of Core agricultural Data (MSCD);
- Construction and use of appropriate sampling frames (Area sampling frame/Master Sampling Frame (MSF), etc.);
- Nomadic/Transhumant Livestock Statistics;
- Computer Assisted Personal Interview (CAPI) system – Case of Survey Solutions;
- Collection and compilation of Agricultural Cost of Production (AgCoP) data;
- Compilation of Supply Utilization Accounts and Food Balance Sheets (SUA/FBS);
- Post-Harvest Losses (PHL);
- Undertaking Agricultural Census; and
- Others – Specify.

Countries are requested to indicate only three top priority TA needs which are very relevant to their present state of statistical system, and which will in turn have very significant impact on the realization of the agricultural statistics program objectives. Such top priority TA needs should be realistic and actionable in the short-term of 1-2 years. The information on the reason of each indicated TA priority need, together with the planned period for implementing the related activities is also requested.

[3] *This is as per the latest version of the used questionnaire.*

The main objectives of this survey are the following:

- Expand the number of countries that are benefiting from AfDB TA program in agricultural statistics;
- Update the country TA needs analysis and extend further the range of areas covered by the TA program; and
- Better plan for TA delivery, by clustering countries on the basis of their TA needs with a view to conducting joint statistical capacity building activities.

In 2014, and following the first CA cycle (for 2013 reference year), the very first Technical Assistance Priority Needs Survey was conducted by the Bank. The survey helped to identify high-priority TA needs of African countries that were prevailing at that time. Findings from this survey revealed that 34 African countries representing 68% of all countries that responded considered *Strategic Plans for Agricultural and Rural Statistics (SPARS)* to be a critical element in improving agriculture statistical system[4]. The SPARS therefore was the main focus for Bank TA program in Africa, until 2019. A total of 24 countries were assisted in developing their SPARS. The SPARS and other important documents which resulted from in-depth country assessment of the state of NASS guided the action plan for agricultural statistics operation during the subsequent years in concerned countries.

[4] *This contributes tremendously to improving the NASS capacity as regarding its prerequisite dimension.*

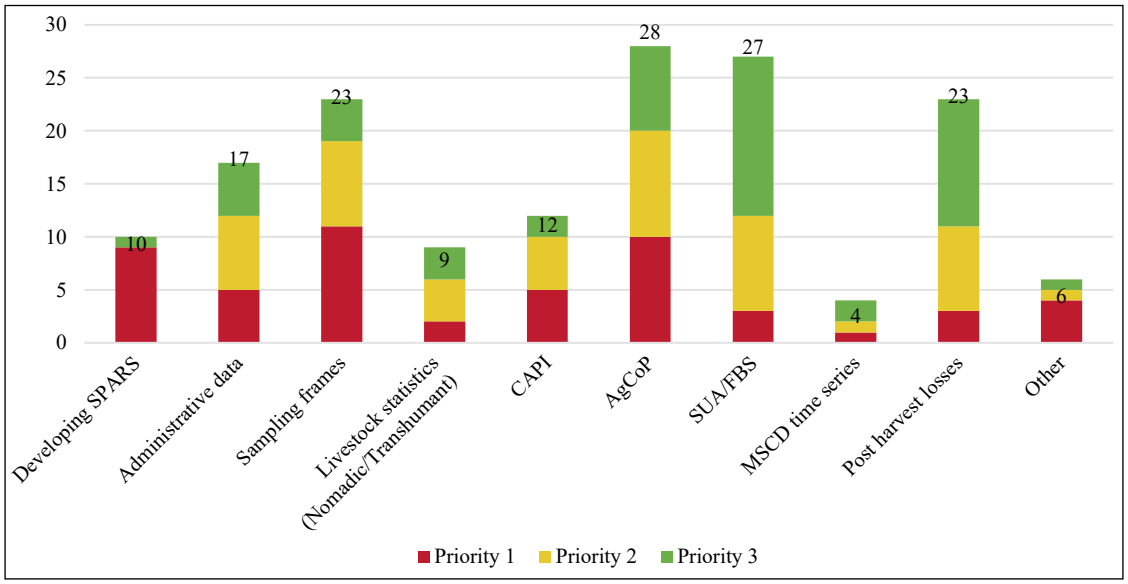
The second most popular area for TA needs was *Agriculture Census*, which was prioritized by 22 countries representing 44% of the countries that responded.

In light of the benefits of the first Technical Assistance Priority Needs Survey, it became necessary to update regularly the TA priority needs of countries to reflect changes that may have occurred with the development of their National Agricultural Statistics Systems (NASSs). Hence, a second study to identify TA priority needs was conducted in 2019, and a third and most recent one in 2022[5].

The TA Priority Needs Survey of 2019 revealed that *Agricultural Cost of Production (AgCoP)* and *Supply and Utilization Account/Food Balance Sheets (SUA/FBS)* were the two most popular areas, with 28 (53%) and 27 (52%) countries, respectively. This was followed by the construction and use of *Master Sampling Frame* for agricultural surveys and *Post-Harvest Losses (PHL),* each reported by 23 (44%) countries (See Figure 2 below). In the case of MSF, a total of 11 out of the 23 countries (48%) had indicated the need as their first priority. The Figure further indicates that there was relatively high demand of TA for *Administrative Data* development and *Computer Assisted Personal Interviewing (CAPI)*, in 17 countries (32%), and 12 countries, respectively.

[5] *See the latest report of 2022, at: https://www.afdb.org/en/documents/identification-priority-technical-assistance-needs-improving-agricultural-statistics-africa-countries.*

Figure 2
Number of countries by TA needs and level of priority in 2019 TA Needs Survey

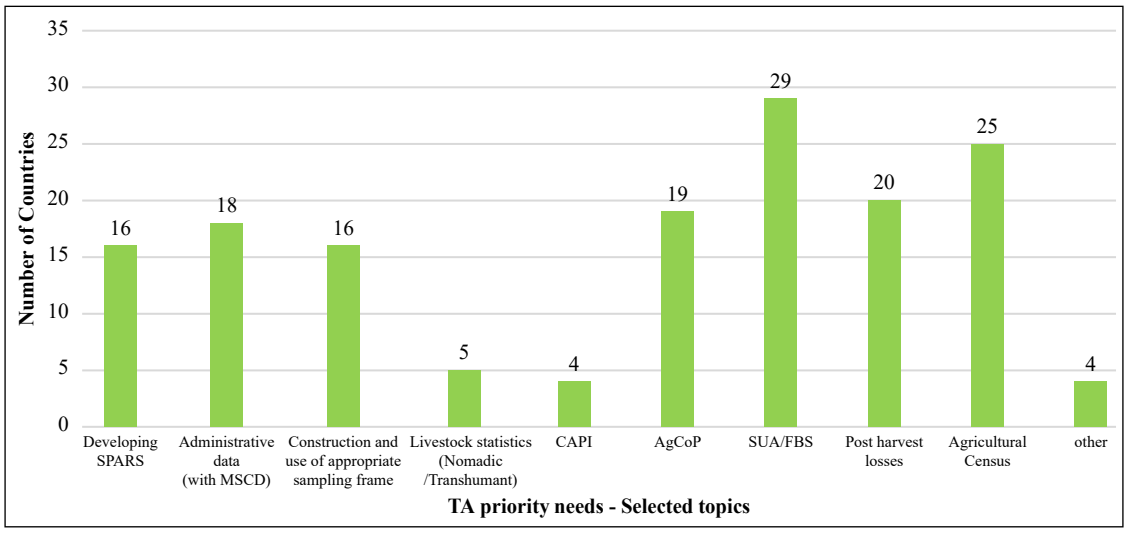


The above findings explain why AfDB TA Agricultural Statistics Program have been focusing mostly on the following areas, among others: AgCoP, FBS, MSF, CAPI, Administrative Data. This is in addition to the Agriculture Census area, as revealed by findings of the 2013 TA Priority Needs Survey.

Regarding the 2022 TA Priority Needs Survey, and as per Figure 3 below, the most popular areas proved to be more or less the same as in 2019. 29 (56 %) countries indicated that the "*Compilation of SUA/FBS*", is one of their 3 top TA priority needs that they would like to have implemented in a very short-term period. For 66% of them (19 countries), this area was indicated to be priority 1 or 2. Figure 3 further shows that "*Agricultural Census"* is the second most popular area, with 25 countries (48%) in need of TA in that field. Among them, 88% (22 countries) indicated that this area is priority 1 or 2. This was followed by the "*Post-Harvest Losses (PHL)"* and "*Agricultural Cost of Production*" areas that were prioritized by 20 (38%) and 19 (37%) countries, respectively. Other areas with relatively high demand for TA are "*Development of Administrative Data, including the Minimum Set of Core agricultural Data (MSCD)"* with 18 countries (35%), where it is priority 1 or 2 in almost all of them (15 countries - 83%). This area is followed by *"Developing Strategic plan for Agricultural and Rural Statistics (SPARS)"* and *"Construction and use of appropriate sampling frames (Area sampling frame/Master Sampling Frame (MSF)"*. Each of these was indicated to be an area of TA priority need by 16 countries (31%), respectively.

While the above findings indicate that FBS, AgCoP, MSF, Agriculture Censuses, and Administrative Data development should continue to be of TA program focus for the Bank, other new and emerging areas such as PHL should be considered in the program, while resuming TA delivery on SPARS as well. The justification of TA need for SPARS is explained by the fact that the implementation of the first generation is ending for many countries while that staff capacitated at their preparation time may no longer be available.

Figure 3
Number of countries per selected TA topics as per 2022 Survey



4. Specific surveys for key Technical Assistance priority areas

The TA Priority Needs Surveys were supplemented by specific surveys for key priority areas selected for TA delivery program of the Bank, in order to better understand countries' actual context and specificities. That has so far been the case for FBS, AgCoP, CAPI and MSF (See Box 3 below for more information on one example - AgCoP case).

Box 3: Identification of country specific TA needs – Case of AgCoP in 2023

This survey was undertaken following the 2022 TA Priority Need Survey. The objectives of the survey are to: (i) Cluster countries based on their TA specific needs for AgCoP, for a better planning of statistical capacity building activities; and (ii) Provide TA on AgCoP, taking into consideration country actual context and specificities. The identification of TA specific requirements for AgCoP covered both the NSOs MoAs from the 19 countries, which had indicated AgCoP as one of their 3 TA priority needs, through consultation with all agricultural sub-sectors.

These organizations were requested to provide information on the following items:

- Whether any AgCoP activities have been undertaken, details of the implementation level achieved;
- Sectors/commodities covered for each AgCoP activity, as well as the related level of implementation; and
- AgCoP activities for which they need technical assistance, and the expected year for implementation.

Some key findings are the following:

- Only 7 out of the 19 countries (36.8%) have currently or had some time ago an AgCoP Statistics system in place, and 12 countries (63.2%) have never had such a system.
- While there has been some level of implementation of AgCoP activities across the 7 countries where the system exists, it is obvious that almost of all of them are facing important challenges and that there is still much to do in terms of support, particularly in the areas of analysis of collected data.
- Each of the 19 countries requesting AgCoP TA clarified in which specific areas of AgCoP the assistance was required: (i) Setting up the AgCoP system and definition of survey characteristics; (ii) Development of tools and organization of data collection; (iii) Development of data entry tools and data processing (iv) Data analysis); (v) Model building); and (vi) Data dissemination.

The results of those specific surveys on such most prioritized TA areas by countries helped to inform plans for statistical capacity building program in agricultural statistics that is client-oriented to ensure country ownership, and delivered in an efficient, cost-effective, well-organized, and coordinated manner. This is well shown in two of the papers published in this 2025 special issue of Statéco, on FBS and CAPI respectively, together with some of the results of the related specific surveys.

The provision of TA, as well as its impact and outcomes, are illustrated in the papers dedicated to selected subjects, namely AgCoP, FBS, MSF, CAPI and MSF, in this 2025 special issue. For AgCoP, FBS and CAPI, there are two papers, which are complementary, one presenting the AfDB related TA delivery model and another one on how it was applied to a given country.

5. Some key achievements

Based on findings from the above country assessments and surveys, the AfDB has been providing its Regional Member Countries[6] with technical assistance at various levels in a participatory manner, for the purpose of strengthening the recipients' capacity and ensuring ownership of the end products. Since 2013, bilateral TA delivery to countries has covered several areas and achieved the following:

- Developing SPARS in 24 countries;
- Setting up robust and sustainable Supply Utilization Accounts and Food Balance Sheets compilation systems in 13 countries;
- Setting up and/or strengthening Agricultural Cost of Production statistics systems in 5 countries;
- Building and using Master Sampling Frames for agricultural surveys in 6 countries;
- Using Computer-Assisted Personal Interviewing for agriculture censuses and surveys in 16 countries;
- Compiling MSCD for 52 countries; and
- Undertaking agriculture censuses in 3 countries.

Such bilateral TA, in addition to several regional training workshops, have benefitted various experts from National Statistics Offices and Ministries in charge of Agriculture[7] in countries and regional economic communities (RECs). The following workshops have been organized across the continent:

- 4 regional workshops on CAs that two people from each country attended.
- 2 regional training workshops on the use of guidelines of each of the following: SPARS, SUA/FBS, AgCoP, MSF, and CAPI that two people from each of the countries concerned and one representative of each REC attended.
- 7 regional workshops on MSCD compilation that two people from each country attended.

All the above have involved developing related TA tools (examples: CA Excel Model, FBS compilation Tool for each country, Trade Data Mapping Tool to facilitate SUA compilation, FBS Formatting Tool, AgCoP Simulation Model, AgCoP survey instruments, MSCD Validation Tool, etc.) and supporting documents (roadmap for each TA area to country concerned, training materials including guidelines and user manuals for each TA area, etc.).

[6] *Beneficiary countries are selected based on the following criteria: TA priority need area, country demand driven, political will, commitment and readiness to ensure ownership and sustainability.*

[7] *More country experts, from different agriculture sub-sectors, were trained during the implementation of each TA program in targeted countries.*

6. Conclusions

The ASCIs are useful in profiling the development level of a country's agricultural statistics system over time as a whole, and in terms of the capacities of its institutional infrastructure, resources, statistical methods and practices and availability of statistical information. When these ASCIs are produced and published regularly, they facilitate the monitoring and evaluation of progress achieved in investing in capacity building for agricultural statistics development on the continent. On the other hand, this package of composite indicators plays a crucial role in contributing to the establishment of robust national agricultural statistical systems. However, meeting all TA needs requires a broad knowledge base and diverse expertise. This necessitates strong collaborative working partnerships between the AfDB and other partners concerned.

Indeed, the improvement of agricultural statistics in Africa recorded so far has been achieved through the collective effort of statistical capacity-building partners, including the AfDB, FAO, Regional Economic Communities (RECs), Sub-Regional Organizations (SROs), Statistical Training Centers, Donors, and not least, the beneficiary countries themselves. This close collaboration and collective determination to improve agricultural and rural statistics in Africa must continue to sustain progress. It will require a sustained capacity-building effort for some years to come, in order for each NASS to fulfil its purpose and produce comprehensive, reliable, up-to-date, and consistent agricultural data.

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