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AGENDA ITEM 3

RESPONSE RATE TO FAO QUESTIONNAIRES AND DATA COLLECTION PLANS FOR 2020

Jean Marie Vianney MUNYESHYAKA
Statistician
Statistics Division, FAO, Rome

Summary

This paper has two purposes. It aims first at providing the AFCAS members with an overview of the situation concerning FAO's data collection of official data coming from countries, focusing on the availability of the data and to some extent of data quality in the region. The second purpose is to discuss the major causes of the relatively low regional response rate to questionnaires and the possible solutions to improve data availability and quality.

It is important to recall that the quality of the data disseminated by FAO is strongly dependent on the completeness, accuracy and comparability of the collected national data.

The paper has the following structure. After the introduction, section 2 describes the issues faced in collecting and processing country data. Section 3 describes the status of data availability and quality in the region based on the questionnaires received. Section 4 formulates some hypothesis on the possible causes for low response rates and proposes some possible solutions for discussion with AFCAS members.

1. Introduction

The agricultural statistics system is one of the most important building blocks for the formulation of development plans and policies, aimed at improving the efficiency of agriculture production and distribution; as well as the food availability in the world. Article I of the FAO Constitution states clearly that "The Organization shall collect, analyse, interpret and disseminate information relating to nutrition, food and agriculture". In this regard, FAO has constantly attached great importance to the collection, processing and dissemination of food and agriculture statistics. Through time, the FAO statistics have become a global public good, covering the food, agriculture, forests, fisheries and natural resources statistics for more than 200 countries.

In November 2005, FAO endorsed the Principles Governing International Statistical Activities, developed by the Committee for Coordination of Statistical Activities, and thereby expressed its commitment to the principle that "high quality international statistics, accessible for all, are a fundamental element of global information systems"; and to the endeavour of continuously introducing "methodological improvements and systems to manage and improve the quality and transparency of statistics". The Statistics Division of FAO (ESS) is consistently orienting its collaboration with the member countries to improve the availability and quality of, and access to the data for all users.

2. General issues and FAO data problems in the regions

Policy makers and development partners face continuously new challenges in promoting the role of agriculture as an engine for economic growth, poverty reduction and food security. At the same time, agriculture is increasingly contributing to global environmental problems, such as land degradation, water scarcity and greenhouse gas emissions.

The increased complexity and articulation of policy issues calls for more complex information systems, in which disciplinary boundaries are blurred. The interrelations of the physical, economic, environmental and social dimensions of agriculture have been analysed in-depth by a project in which FAO was involved -- the Global Strategy for the Improvement of Agriculture and Rural Statistics (GSARS). One of the starting points of the GSARS was 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."

In spite of such increased and more complex information requirements, countries of the AFCAS region show limited ability to provide adequate data, which needs to be discussed with a view to identify possible action to increase the availability of data.

Member countries have issued recurrent complaints on the data published by international organizations. Discrepancies are observed between national and international data, and sometimes data are not homogeneous across international organizations. This is due to the inevitable harmonization and validation activities that take place at international level. The United Nations Statistical Commission (UNSC) has promoted two initiatives in since 2012 on the coordination of Statistical Activities in the UN

System and on the need to peer-review, the data published internationally. While the first initiative is being pursued and a “Friends of the Chair” Group was formed in 2013, the second one was halted because the disadvantages of adding a new international validation layer have been considered to be higher than the benefits. The issue of international data validation from the countries remains nevertheless a very serious one.

The FAO Statistics Division encounters a number of problems with gathering of data through questionnaires from national institutions. The main problem is data availability and quality. In particular, questionnaire sent by FAO to national statistical counterparts show a significant percentage of non-responses. Incoming data are often incomplete and sometimes inconsistent across data sources and over time. In other cases, data do not comply with international standards, and need to be harmonized prior to processing.

Harmonization, imputation standardization processes is a reason for international data to show discrepancies with national sources. FAO has addressed the root causes at international classification level and has worked for several years to transform its commodity list in an international standard. The shift from FAO commodity list to the *CPC rev 2.1-Extended* international classification took place starting in 2013. After harmonizing data, gaps in the basic data are filled in with a number of imputation techniques. Imputation of missing data is a necessary step for all international organizations to be able to compile world or regional aggregates, and derive indicators or analytical reports such as the Supply Utilization Accounts or the Food Balance Sheets. All datasets go through domain-specific and iterative validation procedures that are however internal to FAO and to few selected experts or users.

This paper will consider possible reasons why primary collection of agriculture and food security data is weak in the region, with a view to **guide a discussion on statistical capacity development needs**.

3. Data availability and quality in the region: a short description of the data received through FAO questionnaires

The first part of this section identifies the main patterns and data collection issues, while the second part provides insights on each questionnaire. The FAO Statistics Division sends out seven annual questionnaires on production, producer prices, land use, pesticides, fertilizers, Food Loss and Government Expenditure in Agriculture (GEA).

The paper presents Response Rates by territory. This is an indicator whose numerator is the number of filled questionnaire from a given territory, and the denominator is the number of questionnaires (domains) that were dispatched to that territory.

$$\text{Response rate} = \frac{\text{Number of questionnaires filled (by year)}}{\text{Number of questionnaires dispatched to this territory (by year)}}$$

Another indicator considered in this paper is Data Completeness. This is the number of data items provided by official sources, i.e. data disseminated by a national statistical system, as a share of the total expected data items.

$$\text{Completeness rate} = \frac{\text{Number of official data points (by year)}}{\text{Number of expected data points (by year)}}$$

The Data Completeness of a dataset may not be the same as the response rate of the related questionnaire (domain) due to below reasons:

- ✓ Questionnaires received may not be fully filled-in
- ✓ Not all data points may be collected in the questionnaire
- ✓ There may be additional sources of official data, other than the questionnaire.

To facilitate the analysis of Data Completeness and the comparison with the questionnaire response rate, two indicators of completeness are proposed:

- i) Dataset completeness from all official data,
- ii) Dataset completeness from questionnaire.

Another point to note is that response and completeness rate for the most recent periods may not be relevant, as the information we require is made available by countries with some delay.

3.1 Overall patterns and data collection problems

In 2018, African countries show lower response rates compared to the world average.

The Middle Africa region shows the lowest response rate (10%) while northern Africa shows the highest response rate (50%). The other sub regions show a response rate of about 30%.

The completeness rate of official data points is still low at regional level (20%) with the highest observed value in Northern Africa (28%), and the smallest in Middle Africa (10%) (Fig.1.1).

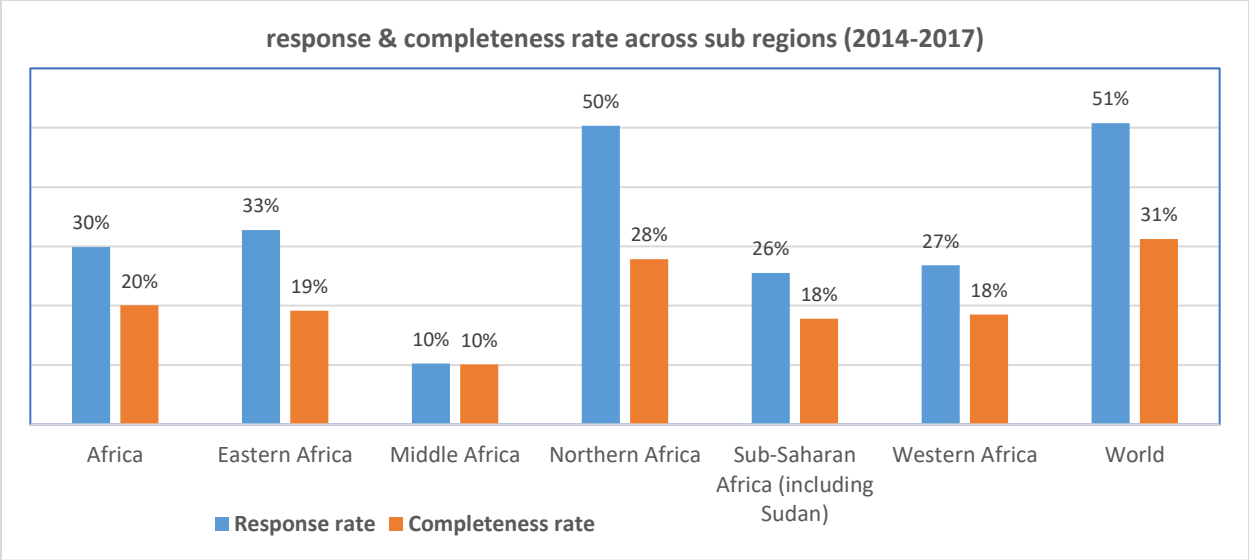


Fig. 1.1: Response and Completeness rates across sub regions of Africa (2014-2017)

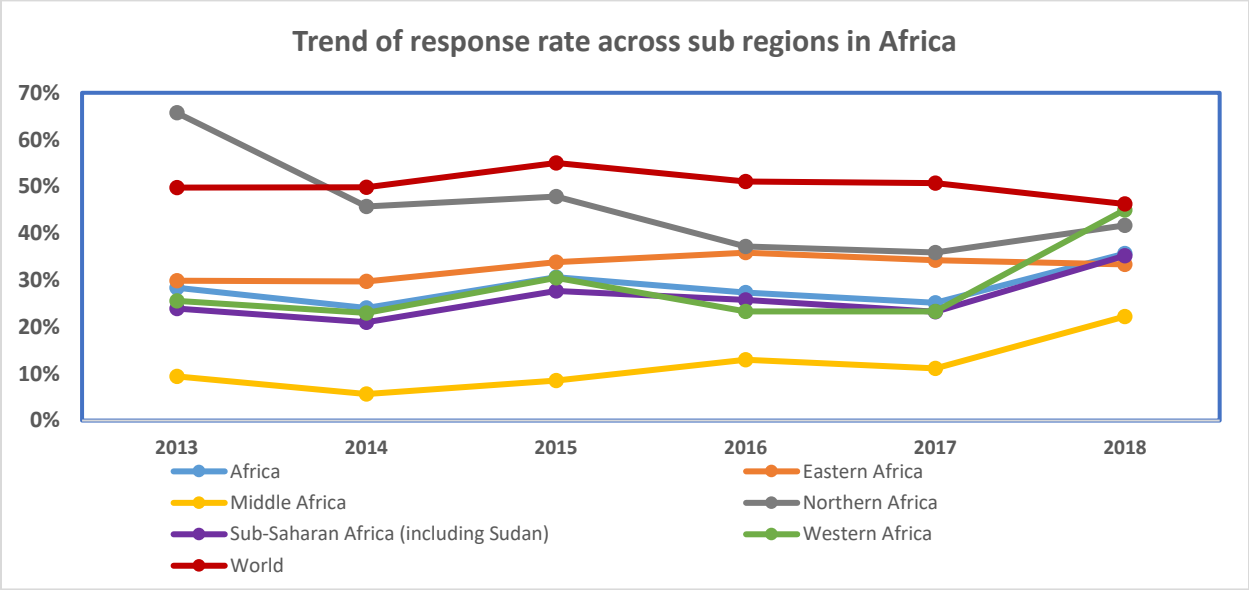


Fig. 1.2: Trend of response rates across the sub regions of Africa, 2013-2018

Responses rates for Africa as a whole increased from 26 percent to 35 percent. All sub regions show a slight upward trend over this period. However, all sub regions fall below the world average response rate, except for Northern Africa in 2013. The Middle Africa region presents the lowest response rate between 2013 and 2018, and Africa as a whole presents a lower reporting compared to the world average (fig. 1.2).

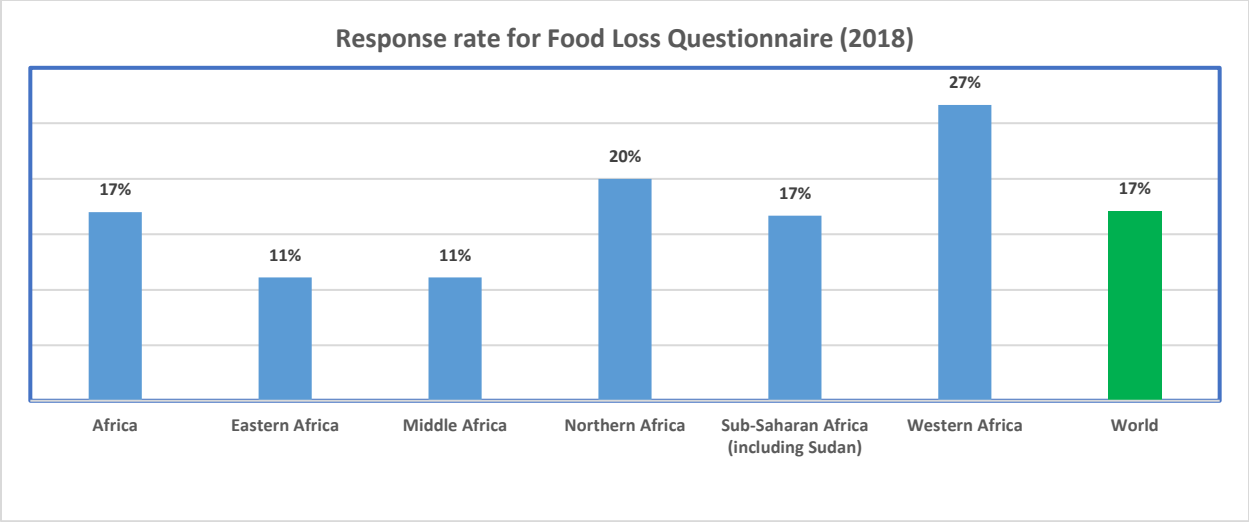


Fig.1.3: Response rate for the Food Loss Questionnaire

In 2018, FAO Statistics Division introduced a new questionnaire on Food Loss and dispatched together with the harmonized questionnaire. The response rate for this new questionnaire is very low in the whole Africa region, as in the entire world (17%). Western Africa shows the highest response rate (27%) for the Food Loss questionnaire (Fig.1.3).

3.2 Data overview for each questionnaire.

The production questionnaire presents the highest response rate, followed by the Producer Prices questionnaire. The GEA questionnaire shows a higher increase rate over time compared to other questionnaires, while the land and pesticide questionnaires show the lowest response rates (Fig 2.1).

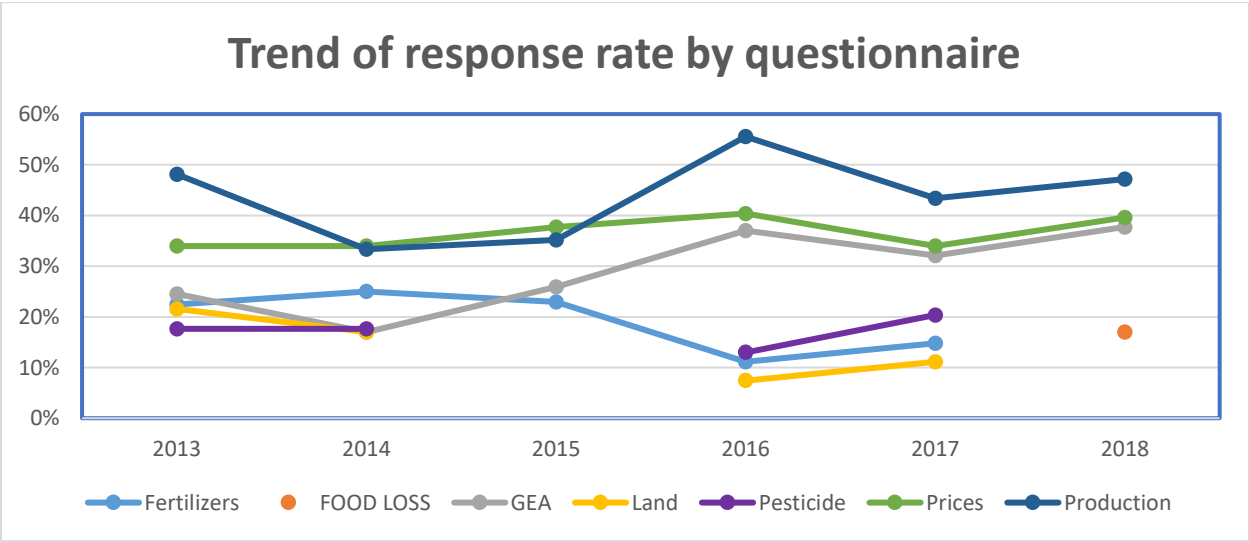


Fig.2.1: Trend of response rate by questionnaire

a) Data gathering on Agricultural Production

Agriculture production is one of the most important datasets in FAOSTAT, and a key input in the compilation of the Supply Utilization Accounts and the Food Balance Sheets. The annual questionnaires request national institutions to report on production, area harvested, yields, livestock primary production quantity and selected information for some key processed commodities. Response rates for the production questionnaire has an upward trend from 34% in 2014 to 52% in 2018 for the Africa region. More importantly, the questionnaires completeness rate decreased from 34% in 2013 to 21% in 2017 (Fig.2.2).

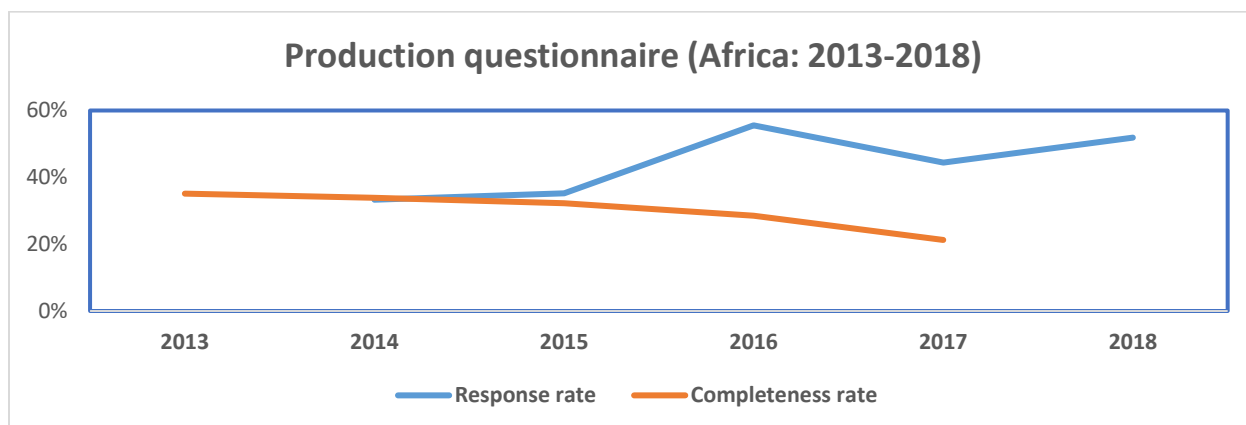


Fig.2.2: Completeness and response rate for Production (Africa: 2013-2018)

b) Data gathering on Agricultural Producer Prices

The questionnaire on producer prices is filled in by approximately 112 countries in the world every year. Many countries, however, report wholesale or market prices instead of the required produced prices, ie those effectively received by farmers. Response rate is still below 39% for the whole continent of Africa in the period 2013-2018. The completeness rate of official data is also low, and shows a decreasing pattern from 30% in 2014 to 16% in 2018 (Fig.2.3). Another problem with the producer prices is the inconsistency of data across time. In these cases, it is difficult to understand if there was a mistake while converting unit of data or it is a change in the price concept monitored, or a change in the variety or a combination of all these factors. AFCAS members are urged to help by providing the TCF (Technical Conversion Factor) in case a non-standard measure is used.

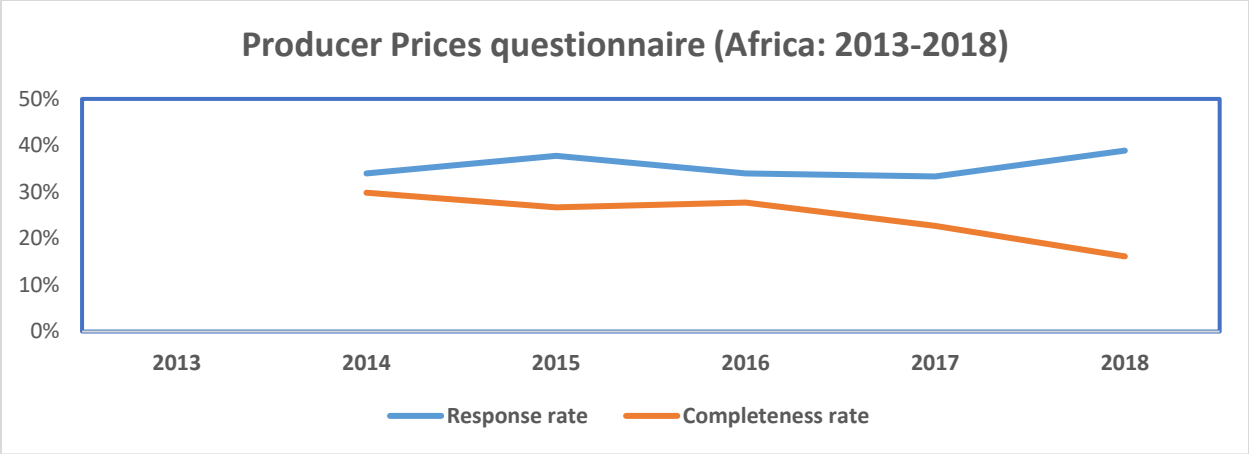


Fig.2.3: Completeness and response rate for Producer Prices (Africa: 2013-2018)

c) Data gathering on Agricultural Inputs

The questionnaire on fertilizers shows a response rate close to 20% in 2013 and 2014, before decreasing to 9% in 2017, while the rate of completeness in this same questionnaire is slowly decreasing from 14% in 2013 to 5% in 2017. Some countries are concerned with confidentiality constraints, which may prevent them from sharing the data.

Only few countries respond to the questionnaire on pesticide use and Land use.

The completeness rate is still low for all questionnaires (below 15%) except for pesticide use, which has 46% in 2013 and 48 % 2014, 23% in 2015 and 22% in 2016, and then dropped to 9% in 2017 (Fig.2.4).

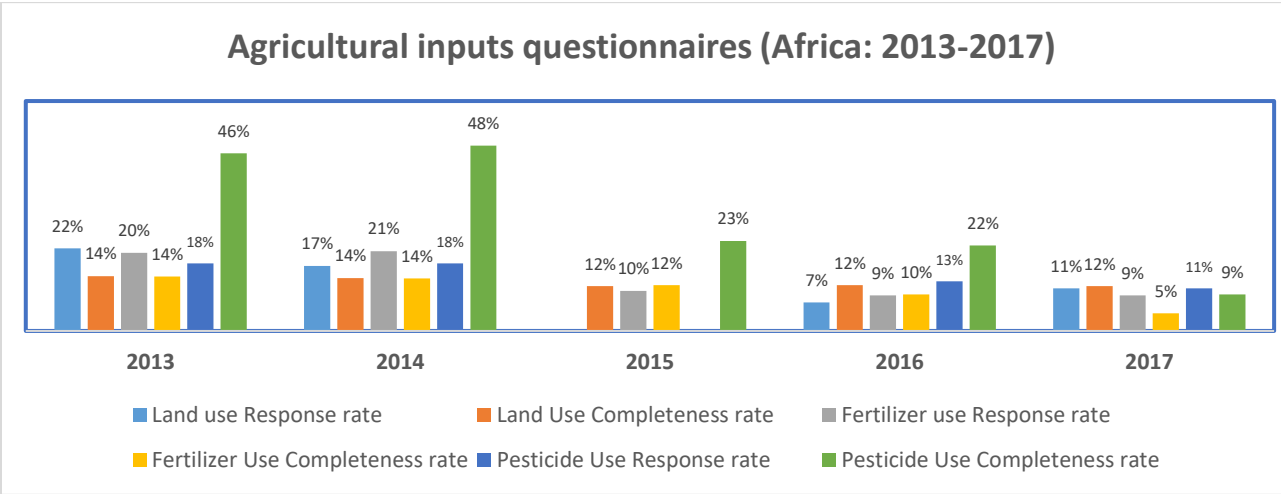


Fig.2.4: Completeness and response rate for Agricultural inputs (Africa: 2013-2017)

d) Other data gathering

Since 2012, the FAO Statistics Division is collecting data also on Government Expenditure in Agriculture (GEA), through a new annual questionnaire. The GEA questionnaire shows an increase in the response rate, which is still low (below 35%) for Africa Region. The completeness rate is still very low (14% in 2017) for the whole continent (Fig.2.5).

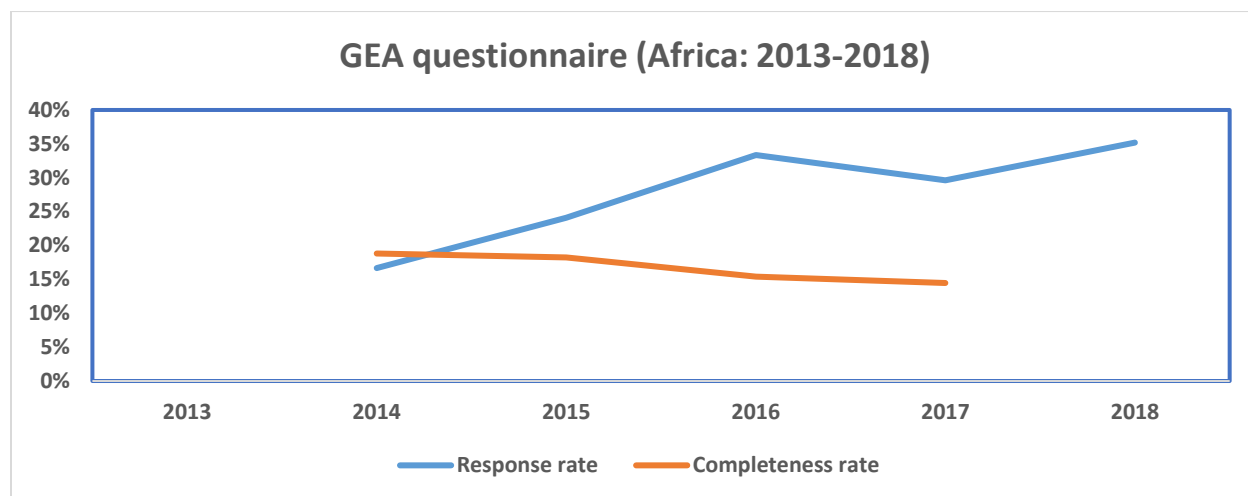


Fig.2.5: Completeness and response rate for Government Expenditure in Agriculture (Africa: 2013-2018)

Other datasets published in FAOSTAT, such as that on Credit to Agriculture, on Foreign Direct Investment, and on External Assistance to Agriculture, are gathered from secondary sources.

4. Questions to AFCAS members

Distinguished Delegates are kindly invited to provide comments and share ideas on the following points:

- Are explanations attached to questionnaires sufficient?
- When a country replies every second or third year, is it because of a channelling issue but the data exist; or are the data not available and the country undertakes ad hoc additional analysis and estimations which are not sustainable on a regular basis?
 - Are data simply not collected on an annual basis?
 - Is it a matter of finding the focal institutions or contact person?
- Are there different and better ways to collect those data than the annual questionnaires?
- Are questionnaires too heavy and long to complete? Is it a matter of resources?
- Was there a change in the metadata (different unit, different concept and/or different methodology) that needs to be documented?
- Is the data collection period of FAO questionnaires convenient for your institution/focal point responsible for the questionnaire?

Furthermore, FAO would like to draw the attention of all AFCAS members on the following matters:

- To up-date the list of focal points for each country, to help FAO request data to the actual data owners
- To share comments with FAO on the questionnaires and related instructions.
- To inform FAO of the actual data availability and frequency
- To share the metadata on the actual concepts, definitions, TCF (Technical Conversion Factors) and methods used

Annex:

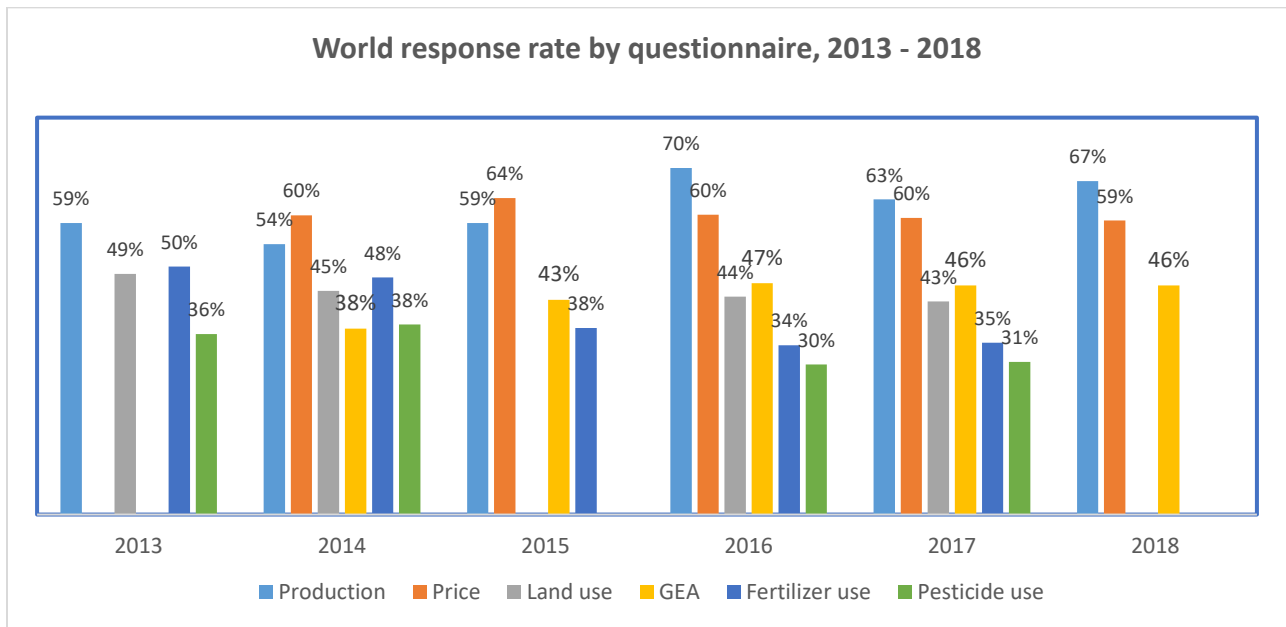


Fig.2.2: World response rate by questionnaire, 2013 - 2018

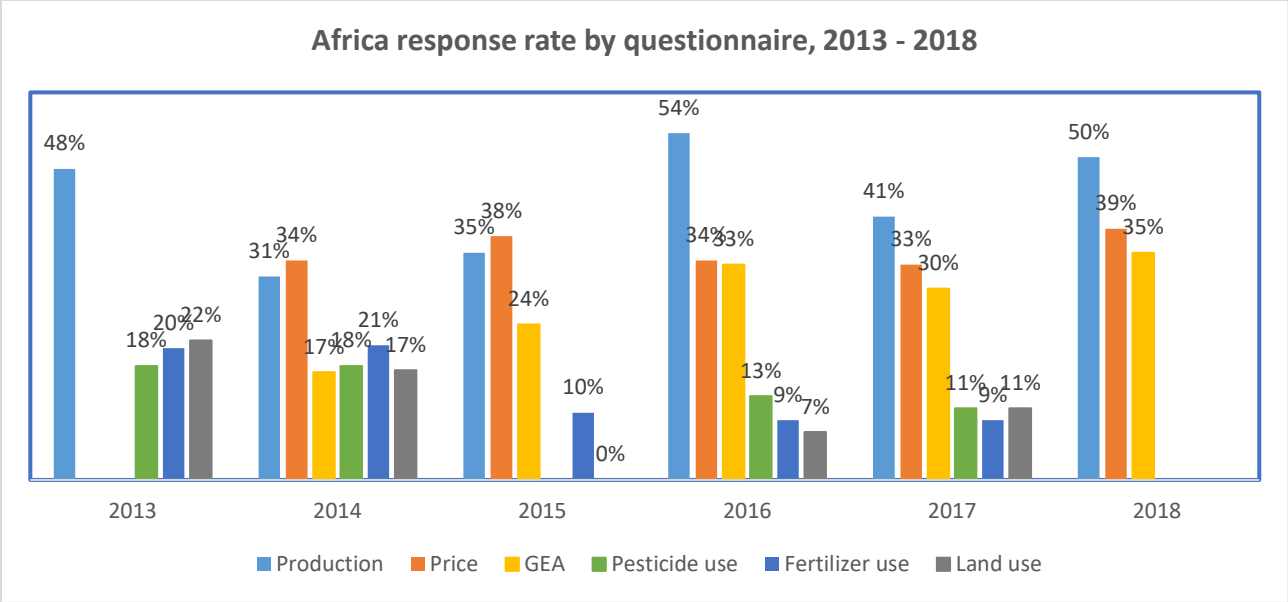


Fig.2.3: Africa response rate by questionnaire, 2013 - 2018