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Strengthening Food Balance Sheets to Support Evidence-based Agrifood System Policies in Africa

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Executive summary

The Food Balance Sheets (FBS) present a comprehensive picture of a country's agrifood system and are a powerful tool for evidence-based policy making. Quality of Food Balance Sheets depends most importantly on regular compilation of good quality data on agricultural production and trade. There is considerable scope for strengthening these for African countries. Food Balance Sheets bring out key features of agrifood systems in Africa. Per capita food availability in Africa remains significantly lower than the global average and is dominated by food of vegetal origin. In comparison with rest of the world, African countries have higher levels of import dependence for key food commodities like cereals, vegetable oils and sugar. FAO's updated tool for compilation of national Food Balance Sheets can help countries do their own accounting and prepare their national Food Balance Sheets on an annual basis. This would be extremely valuable for evidence-based policy making on agrifood systems. However, preparation of good Food Balance Sheets requires, first and foremost, strengthening systems for collection of reliable statistics on crop and livestock production and trade on a regular basis.

Suggested actions by AFCAS

The Commission is invited to provide guidance on recommended actions and priorities for technical support:

- A systematic and comprehensive assessment of systems of data collection on crop and livestock production should be undertaken.
- Countries should strengthen systems of data collection on agricultural production, trade, and other aspects of agrifood systems.
- Efforts should be made to improve timely reporting of data to FAO through the Agricultural Production Questionnaire.
- Countries need to strengthen systems of recording imports and exports, and report trade statistics regularly.
- Countries should undertake regular compilation of national Food Balance Sheets using the online FBS compilation tool developed by FAO.

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1. Introduction

The Food Balance Sheets (FBS) are a national accounting framework for agrifood systems. These present a comprehensive picture of a country's agrifood system covering agricultural production, trade linkages of agriculture, overall availability of different food commodities, diversity of food supply, and utilization of primary commodities for non-food purposes.

FAO compiles Food Balance Sheets for most countries. The latest release of Food Balance Sheets covers 178 countries including 43 countries in Africa.¹ Statistics on agricultural production and trade of food commodities are two key pillars of Food Balance Sheets. Availability of well-measured data on different aspects of utilisation tends to be low, and estimations are used for filling these gaps. Improving data on stocks, feed use, production of processed food items, and use of agricultural commodities for non-food purposes can help improve this critical tool for monitoring agrifood systems.

Apart from creating harmonised Food Balance Sheets for the countries, FAO has developed an online tool that allows countries to compile their own National Food Balance Sheets. The much-improved Version 2.0 of this tool allows multiple designated officials collaboratively (within each country) and simultaneously (across multiple countries) compile data, prepare Supply Utilization Accounts and Food Balance Sheets, and visualize key results. FAO is committed to provide support to countries in adopting this tool and encourages them to prepare their national Food Balance Sheets annually to support evidence-based policy making at the national level.

2. Quality of Food Balance Sheets for African Countries

Usefulness of Food Balance Sheets for guiding policy depends on their quality, which, in turn, depends crucially on data that go into making of the Supply Utilization Accounts. Reliable and accurate national data on agricultural production and trade are most important.

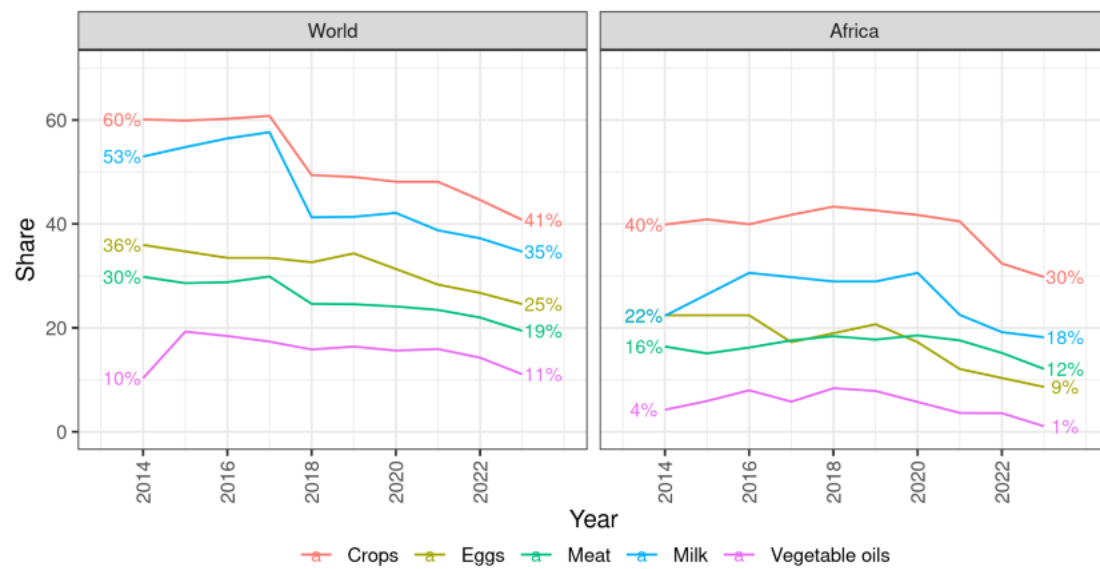
¹ <https://www.fao.org/faostat/en/#data/OA>.

FAO obtains data on agricultural production from countries through the Agricultural Production Questionnaire and complements it with data collection from official publications and websites. Where data are not available from official national sources, recourse is taken to obtain data from international organisations and specialised organisations that deal with specific commodities (for example, Oil World, International Sugar Organization).

Figure 1 shows two important points. First, globally, there has been a decline in collection and dissemination of official statistics on production of key primary commodities. Of all the data on production of crops compiled by FAO, about 60 per cent was official data. By 2023, this was down to 41 per cent. In 2014, official statistics accounted for 53 per cent of observations on milk production; this was down to 35 per cent in 2023. Secondly, collection and reporting of official statistics on production of primary agrifood commodities has been lower in Africa than in rest of the world. In 2023, only 30 per cent of data on production of crops was based on official statistics. Only 18 per cent data on production of milk in Africa was based on official statistics. The shares are even lower for other commodities.

Figure 2 shows the proportion of African countries that submitted Annual Agricultural Production Questionnaires (APQs) from 2021 to 2023. In 2021, 51% of countries submitted their questionnaires, and this figure rose slightly to 53% in 2022. However, in 2023, the submission rate declined to 42%, marking a significant drop compared to the previous year. Overall, the figure highlights that the submission rates remain relatively low, with less than half of African countries providing data in 2023. As shown in Table 1, only 15 countries consistently submitted responses to the APQ in all three years, while 17 countries made no submissions and others participated irregularly. Efforts are needed to improve participation and data reporting to ensure more complete and reliable agricultural statistics across Africa. All countries should be encouraged to regularly compile and submit data through the APQs to improve monitoring of agricultural production and productivity and improve the quality of Food Balance Sheets.

Figure 1. Availability of official statistics on production of primary agricultural commodities in Africa



Note: The proportion of official reporting in the terminal year is expected to be low because of delayed reporting by some countries.

Figure 2 Proportion of African countries that responded to Agricultural Production Questionnaire (per cent), 2021--2023

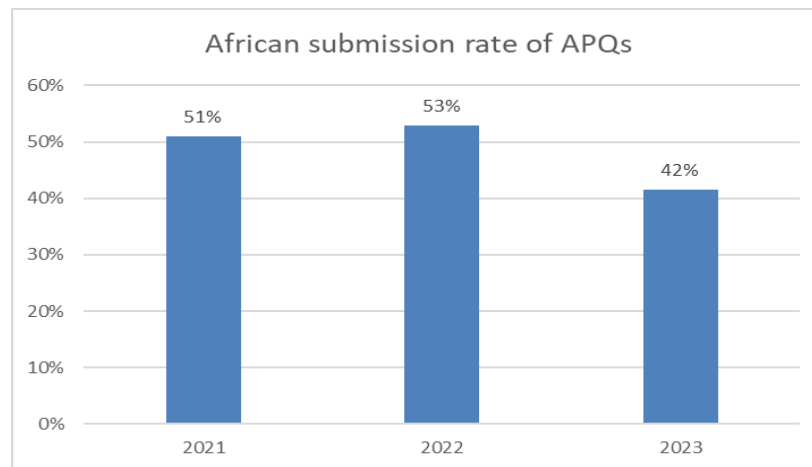


Table 1. APQ Submission Status of 53 African Countries (2021–2023)

Category	Number of Countries	Countries
No Submission	17	Burundi, Cameroon, Republic of the Congo, Djibouti, Equatorial Guinea, Eritrea, Eswatini, Ethiopia, Gabon, Liberia, Libya, Malawi, Mauritania, São Tomé and Príncipe, Seychelles, Somalia, Uganda

Submitted Once	10	Algeria, Comoros, Côte d'Ivoire, Gambia, Ghana, Guinea-Bissau, Nigeria, Sierra Leone, Togo, United Republic of Tanzania
Submitted in two years	11	Angola, Botswana, Burkina Faso, Guinea, Madagascar, Namibia, Niger, Senegal, South Sudan, Tunisia, Zimbabwe
Submitted in all three years	15	Benin, Cabo Verde, Central African Republic, Chad, Democratic Republic of the Congo, Egypt, Kenya, Lesotho, Mali, Mauritius, Morocco, Mozambique, Rwanda, South Africa, Zambia

Availability of statistics on trade, the other important pillar of statistics on food supply, is better. Data on trade are captured in most countries through the customs records maintained at the ports. This is both a strength and a weakness for compilation of trade statistics. It is a strength because, being tied to taxation, countries with well-established systems of customs controls and surveillance can record data on merchandise trade without any significant additional cost. In addition, since data on trade are recorded by exporting as well as importing countries, statistics reported by trading partners serve as a useful tool for validation of data. The fact that statistics on merchandise trade are primarily based on customs records is a weakness because, in countries that do not have strong customs controls and surveillance, a part of the trade goes unrecorded. Such unrecorded trade can be quite substantial for some countries. Also, since customs records are primarily maintained for commercial and taxation purposes, the concepts and systems of classification do not necessarily conform with the statistical requirements.²

Despite these caveats, availability of officially recorded data on trade is better than for other elements of food balance sheets. International statistics on merchandise trade are primarily compiled by the UN Statistics Division and are disseminated through the UN-COMTRADE database. Globally, about 70 per cent of observations on recorded trade on agrifood commodities are compiled by countries and reported officially. In Africa, 69 per cent of recorded data on trade are officially compiled and reported by countries (Figure 3). For countries that do not report trade statistics, it is possible to aggregate data reported by their trading partners though this has its own limitations (most importantly when all trading partners also do not report data). However, it is important to mention in this context that the extent of unrecorded Informal Cross-border Trade is known to be high in Africa.³ This is a major source of distortions in Food Balance Sheets, and in estimates of food supply, for African countries.

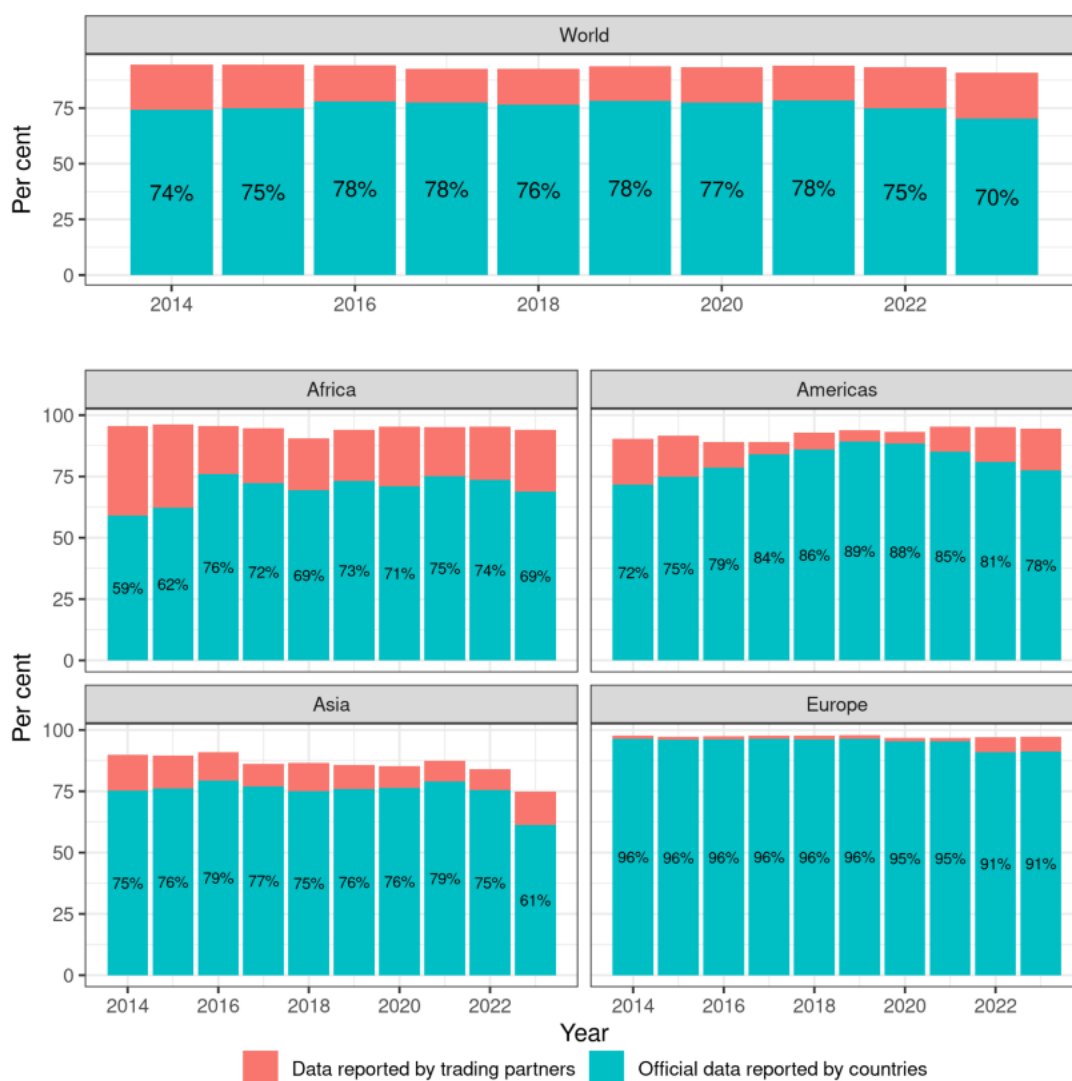
Improving Food Balance Sheets for African countries requires, first and foremost, strengthening systems of agricultural statistics. Collecting good quality data on agricultural production, crop areas and livestock on an annual basis and establishing systems of accurately estimating volumes of trade is extremely important.

Additional information on patterns of utilization, particularly on food processing, non-food uses, stocks and food losses, helps to strengthen the foundations on which food balance sheets are prepared. The strength of methodology for compilation of Food Balance Sheets used by FAO lies in combining a horizontal balancing between supply and utilization with a vertical balancing across primary and derived commodities.

² United Nations Statistics Division (1998), *International Merchandise Trade Statistics: Concepts and Definitions*, Studies in Methods Series M, No.52, Rev.2, Department of Economic and Social Affairs, United Nations, New York.

³ Bouet, Antoine, Cisse, Brahim, and Traore, Fousseini (2020), "Informal Cross-border Trade in Africa", in Bouet, Antoine, Odjo, Sunday P, and Zaki, Chahir, (eds.), *Africa Agriculture Trade Monitor*, IFPRI, Washington DC; Ellis, Stephen, and MacGaffey, Janet (1996), "Research on Sub-saharan Africa's Unrecorded International Trade: Some Methodological and Conceptual Problems", *African Studies Review*, 39 (2), pp. 19–41; UN Economic Commission for Africa (2023), *Informal Cross-border Trade in the Economic Community of West African States (ECOWAS) Region*, Addis Ababa.

Figure 3. Proportion of data on trade reported by countries and by trading partner countries, by region, 2014-2023



Note: The proportion of official reporting in the terminal year is expected to be low because of delayed reporting by some countries.

3. Key Findings from Food Balance Sheets for Africa

This section presents key findings from the Food Balance Sheets for countries in Africa.

Levels and Growth of Food Availability

Per capita dietary energy supply (DES) is a summary measure of food availability. Globally, DES has increased from 2,825 kcal/cap/day in 2010 to 3,016 kcal/cap/day in 2023, a gain of nearly 200 kcal/cap/day (Figure 4). However, over this period, per capita food supply has remained stagnant in Africa, and consistently below the world average. In 2023, per capita Dietary Energy Supply in Africa as a whole was 2,556 kcal/cap/day, nearly 500 kcal below the global mean. Within Africa, eastern and middle Africa have

particularly low levels of per capita food supply while northern Africa has higher food supply than the global average (Figure 5).

Figure 4. Trends in per capita dietary energy supply, Africa and World, 2014-2023

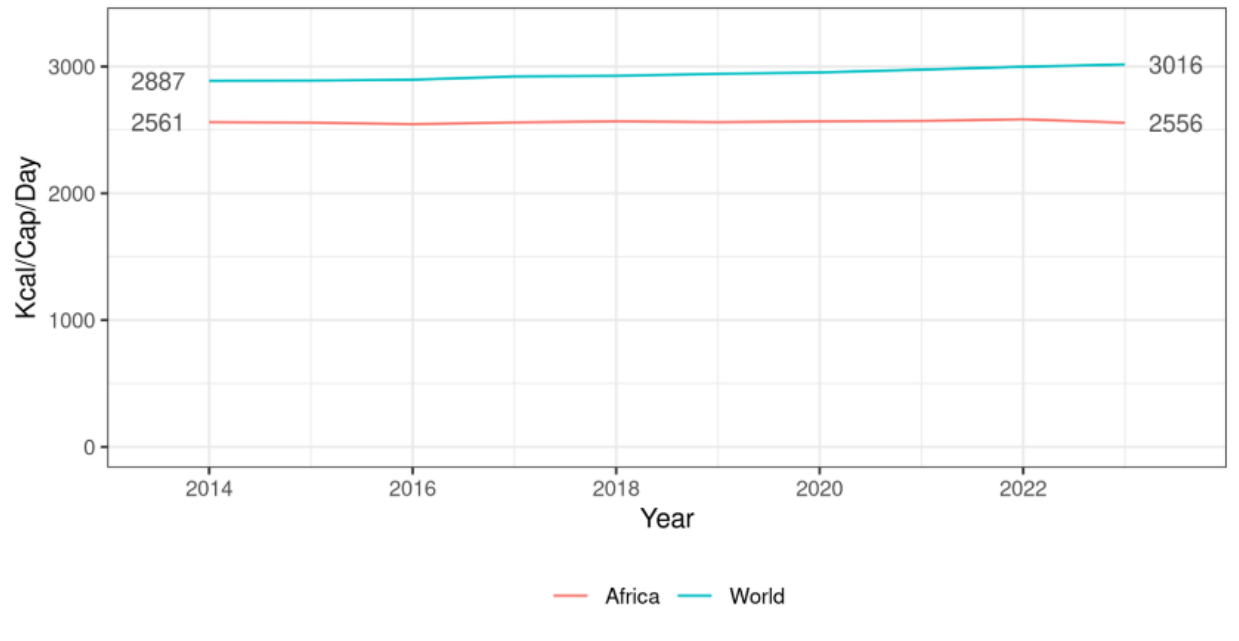
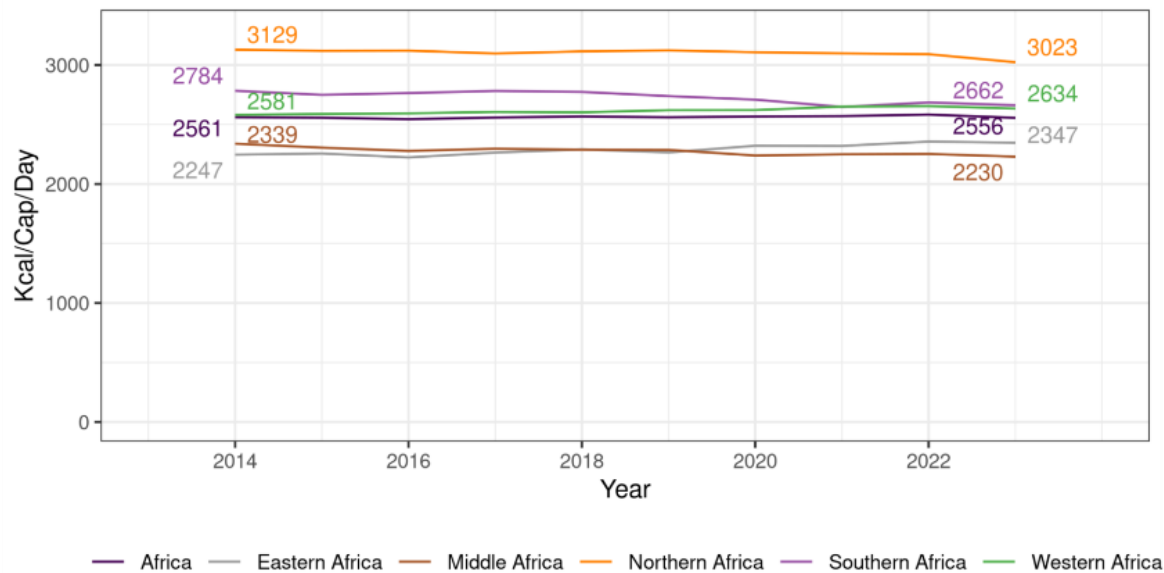


Figure 5. Trends in per capita dietary energy supply, sub-regions of Africa, 2014-2023



Trade Linkages of Agrifood Systems

Trade has become increasingly important for agrifood systems globally. African countries have a higher level of import dependence for most of the food commodities and export only a small part of their gross supply of food commodities. Globally, vegetable oils and sugar are the most traded food group (Figure 6). In 2023, global imports constituted about 47 per cent of total supply of vegetable oils. In case of sugars, 35 per cent of global supply was internationally traded. Africa's agrifood systems heavily depend on imports. In 2023, of the total supply in Africa, 62 per cent of vegetable oils and 60 per cent of sugar was imported by countries. African countries imported 34 per cent of the total supply of cereals. Unlike most other food groups, a smaller share of supply of pulses is imported in Africa than the share of imports in global supply of pulses.

On the other hand, agrifood systems of African countries are less export-oriented than global level of export orientation of agrifood systems. Figure 7 uses exports as a percentage of gross supply (production+imports) to measure export orientation of agrifood systems. The figure clearly shows that agrifood systems of Africa are not export oriented.

Figure 8 presents this differently. Africa accounts for about 19 per cent of world's arable land. Barring pulses and starchy roots, its share in global production of food is significantly lower than its share in arable land. Africa's share in global exports is smaller than its share in global production for all the food groups. On the other hand, for most food groups, share of African countries in imports is significantly higher than its share in global exports.

Figure 6. Imports as a percentage of total supply, by food group, Africa and World, 2010 to 2023 (per cent)

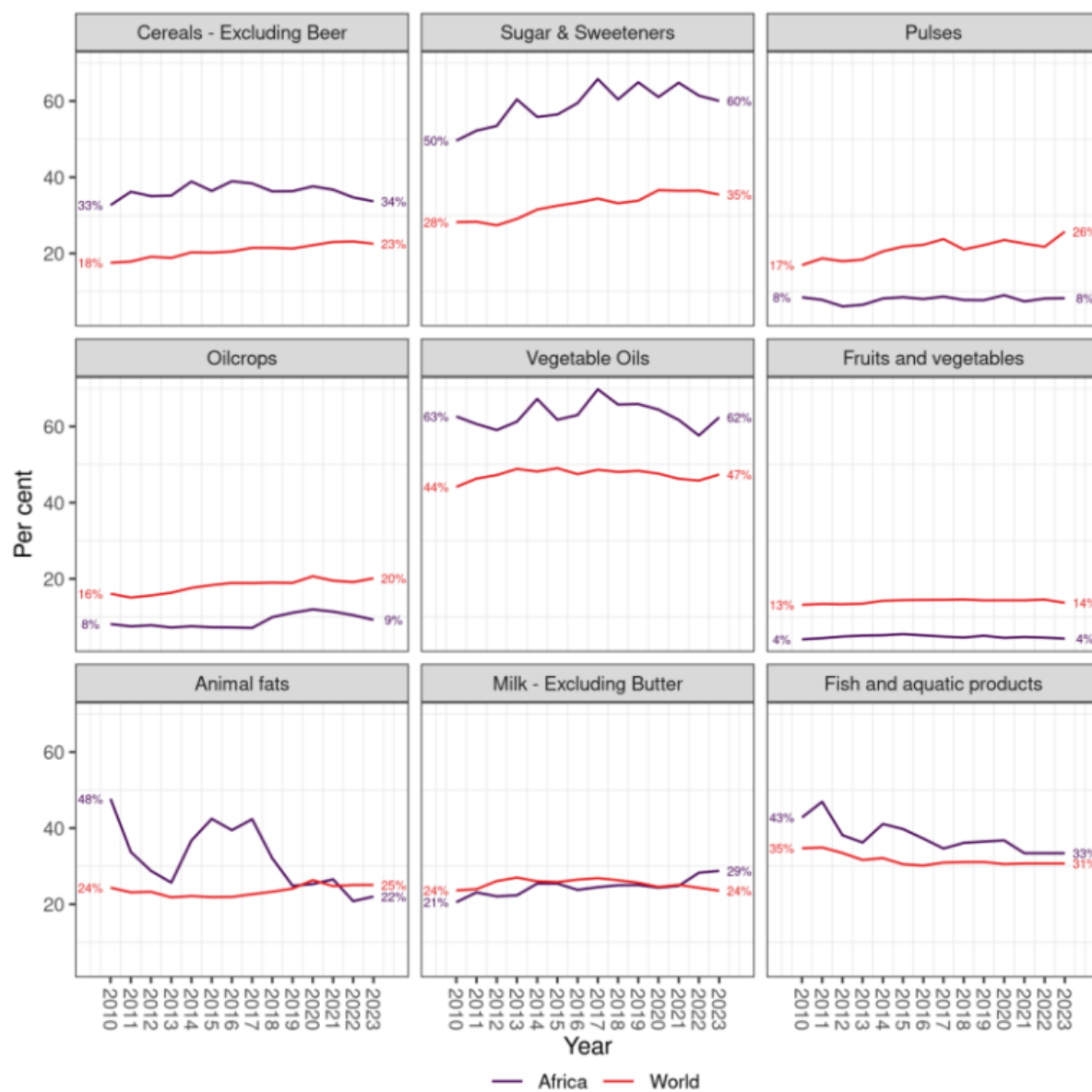
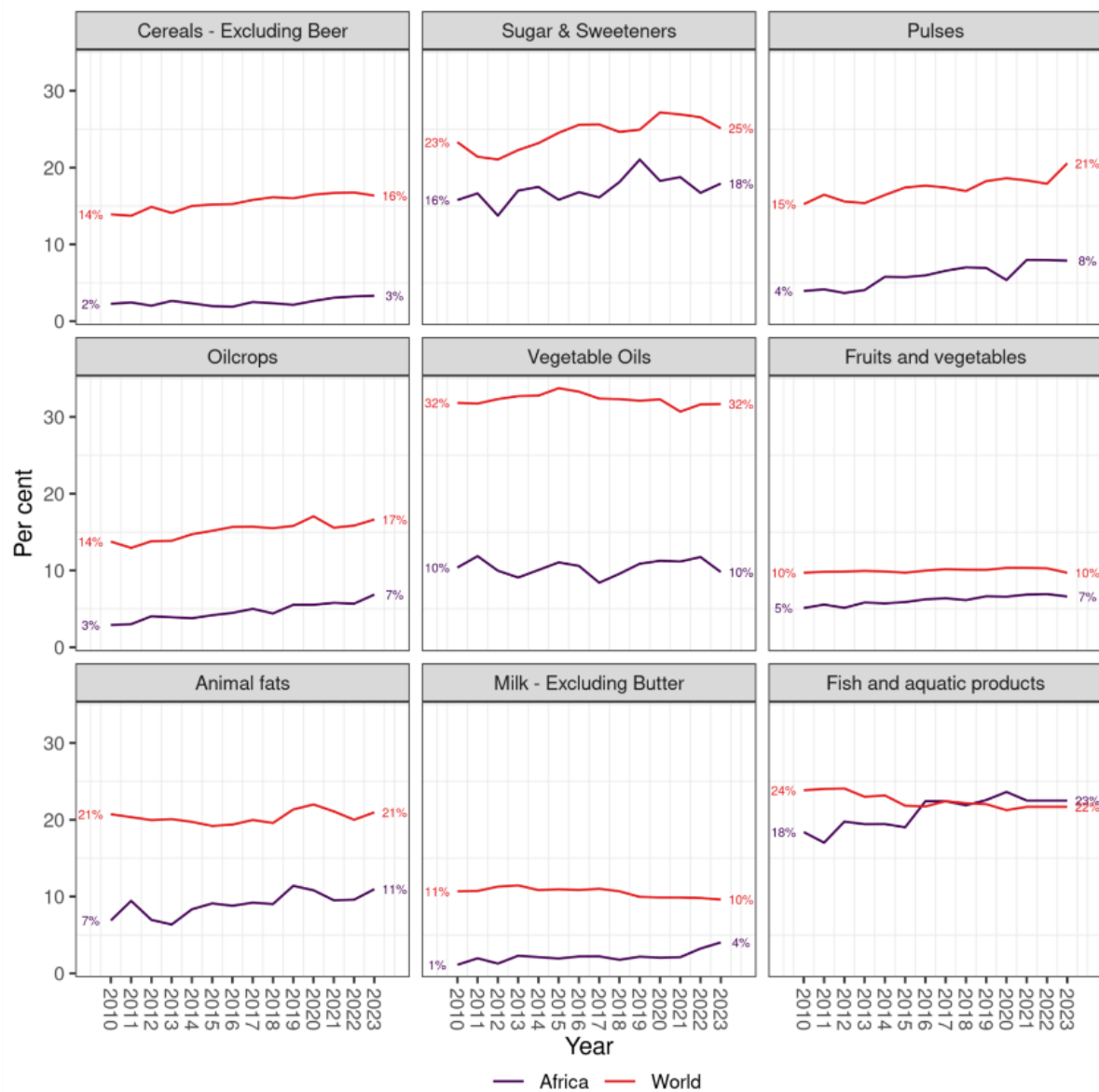
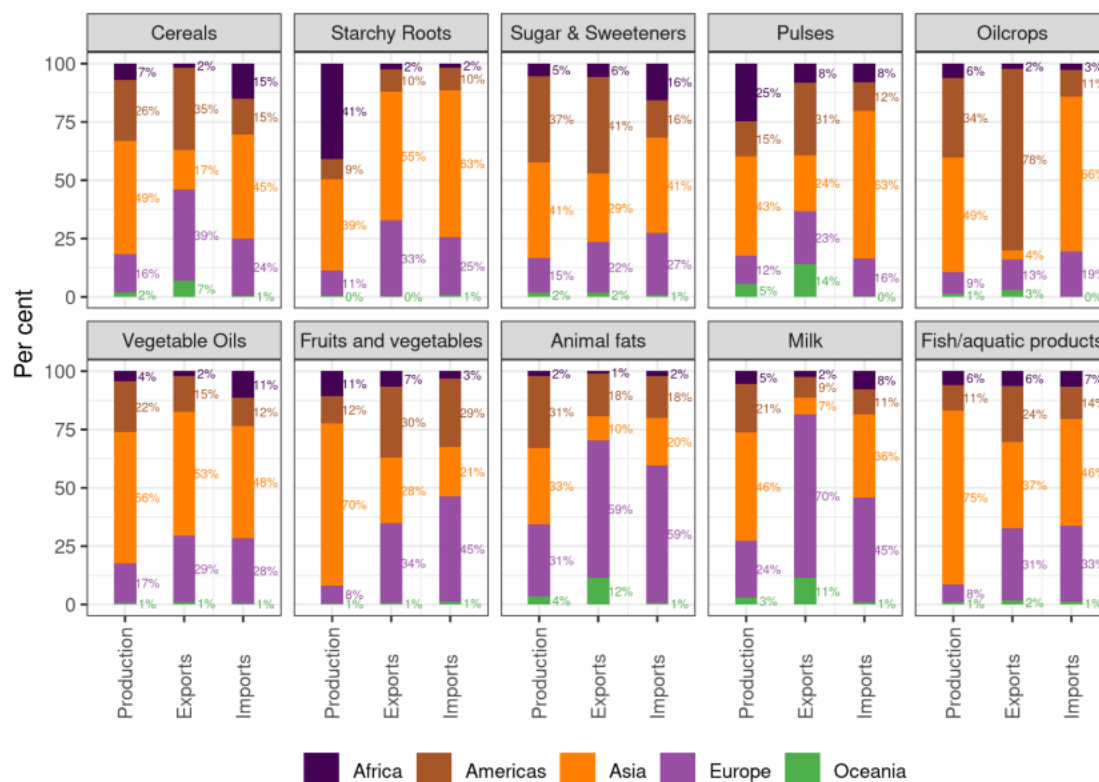


Figure 7. Export orientation of agrifood systems, by food group, Africa and World, 2010 to 2023 (per cent)



Note: Export orientation is defined as Exports/(Production+Imports) and is expressed as a percentage.

Figure 8. Share of different regions in global production, exports and imports, by food group, 2023 (per cent)



Composition of Food Supply

Figure 9 shows the contribution of different food groups to overall dietary energy supply in Africa and the World. It shows that starchy roots – cassava and yams primarily – are an important source of dietary energy supply in Africa. On the other hand, the contribution of livestock products – milk, eggs and meat being the most important – is significantly lower in Africa than in the world as a whole.

The contribution of food groups to the overall availability of protein in food is very different from their contribution to overall dietary energy supply (Figure 10). Globally, cereals are the most important source of both dietary energy supply (42 per cent in 2023) and protein supply (36 per cent in 2023). Livestock products accounted for 36 per cent of the total availability of proteins, though their contribution to dietary energy supply was only 16 per cent. Availability of livestock products is lower in Africa, and they contributed 19 per cent of total protein supply and only 7 per cent of dietary energy supply. Energy-dense foods such as vegetable oils and sugar contribute much more to dietary energy than their share in protein supply. On the other hand, nutritionally dense foods such as fish and aquatic products contribute more to protein supply (6 per cent contribution globally in 2023) than they do to dietary energy supply (1.2 per cent globally). In Africa, 4 per cent of protein supply in 2023 came from fish and aquatic products. Fruits and vegetables also have a low average caloric density and are a rich source of many different nutrients. Their contribution to protein and dietary energy supply was about 6 per cent in Africa and 8 per cent in the world as a whole.

Other uses of food commodities

Of the food commodities that are directly consumed as food, cereals and pulses are the most important commodities that also enter the food chain in a substantial measure through their use as feed. Globally, 35 per cent of cereals and 24 per cent of pulses were used as animal feed in 2023 (Figure 11). However, livestock systems in Africa mainly comprise smallholder pastoralists who are primarily dependent on grazing and feeding crop residues to animals. In Africa, only 17 per cent of cereal supply and 13 per cent of pulses were used as feed.

Of the various food commodities, oil crops processed into vegetable oils find the highest use in non-food sectors (Figure 11). Apart from traditional industrial uses of vegetable oils, biodiesel produced from vegetable oils, along with ethanol produced from sugar crops, has become an important substitute for fossil fuels in many countries. Globally, 45 per cent of vegetable oils were used for non-food purposes. In comparison, only 24 per cent of vegetable oil supplies in Africa were used for non-food purposes.

Figure 9. Composition of per capita dietary energy supply, Africa and World, 2014-2023

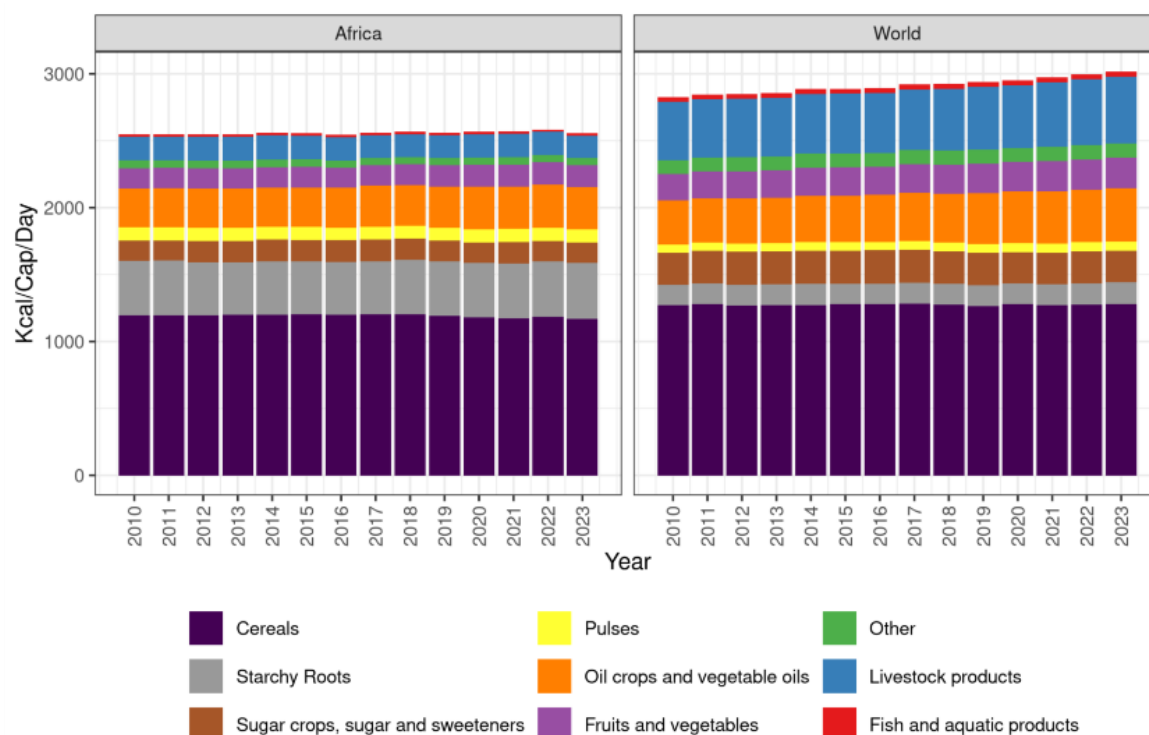


Figure 10. Contribution of different food groups to protein and dietary energy supply, 2021 to 2023

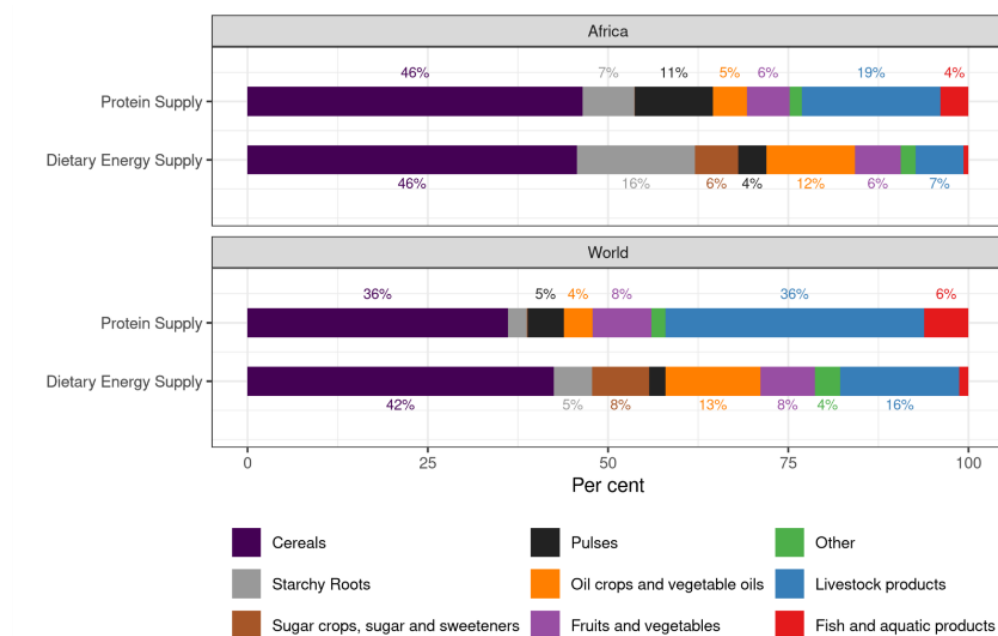
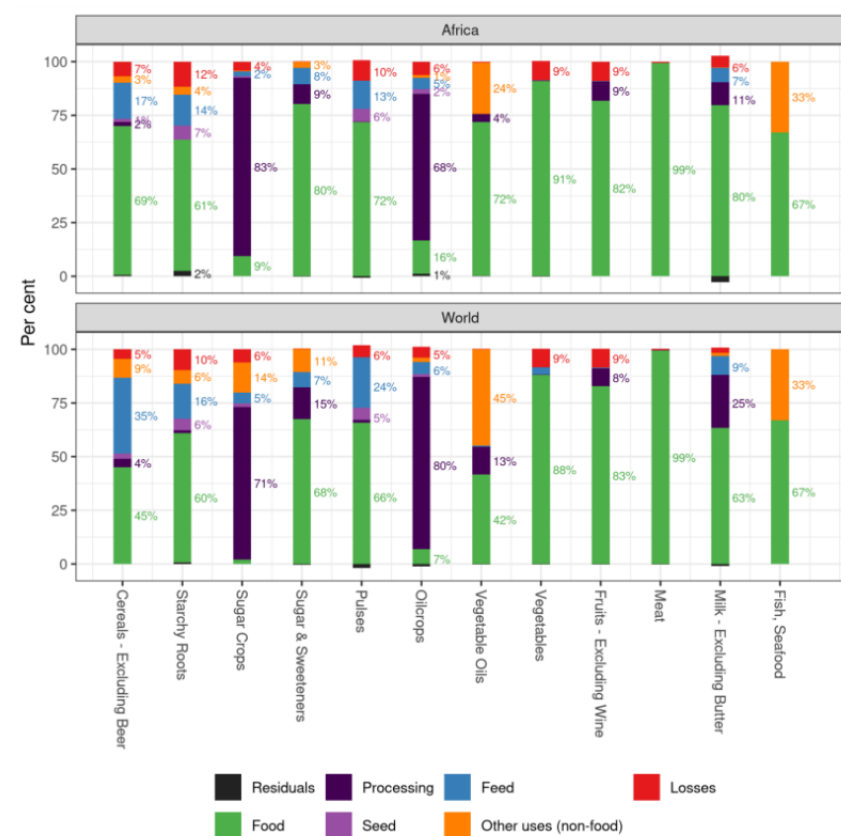


Figure 11. Different uses of supply, by food group, 2023



4. Conclusions and Recommendations

FAO's Food Balance Sheets for African countries reflect some important key features of agrifood systems in Africa. These show that the level of food availability in Africa is lower than in other regions of the world and has remained stagnant in the recent years. In 2023, per capita Dietary Energy Supply in Africa was 2,556 kcal/cap/day, nearly 500 kcal below the global mean. The Food Balance Sheets also show that African countries are highly dependent on imports of vegetable oils, sugar and cereals. On the other hand, levels of exports of food commodities remain low.

Three features of the composition of food basket in Africa stand out. First, food supply in Africa is dominated by cereals. Cereals are the main source of dietary energy as well as proteins. Secondly, food basket in Africa comprises of a larger quantity of starchy roots – in particular, cassava and yams – than their share in global food supplies. Thirdly, the share of livestock products in the food basket in Africa is low.

In terms of utilisation, a greater share of overall food supplies in Africa are directly consumed as food. Use of food commodities as animal feed is low as livestock systems in Africa are mostly dominated by small pastoralists, with small livestock holdings that are mainly bred on grazing or fed crop residues. The use of food commodities for non-food purposes is also relatively low.

Quality of data compiled in the Food Balance Sheets depends, first and foremost, on the quality of agricultural production and trade statistics. There is a considerable scope for strengthening the systems of collection of crop and livestock production statistics on an annual basis. Many countries in Africa do not collect these statistics on a regular basis, and among those that do, many use ad-hoc methods for collection of statistics. A thorough evaluation of the status of data collection on crop and livestock production is needed. This should be followed up with a strategy for strengthening this system of collection of these basic statistics. Collection of trade statistics – both in terms of number of countries that compile and report trade statistics as well as quality of trade statistics in terms of capturing all the trade that takes place between countries – also needs to be strengthened.

FAO's updated online tool for compilation of Food Balance Sheets is a comprehensive tool that can help countries compile all the data and prepare their own Food Balance Sheets. This could help countries in formulating better policies for development of their national agrifood systems.