MAFAP
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Monitoring and Analysing Food and Agricultural Policies
Suivi et analyse des politiques agricoles et alimentaires

METHODOLOGY WORKING PAPER:

Volume II. - ANALYSIS OF PUBLIC EXPENDITURE ON FOOD AND AGRICULTURE

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This technical note is a product of the Monitoring and Analysing Food and Agricultural Policies program (MAFAP). It is a technical document intended primarily for the use of practitioners interested in implementing the methodology for analysing .

Technical coordination of this document was carried out by Jean Balié (FAO). Alban Mas Aparisi (FAO) and Léopold Ghins (FAO) served as technical editors. Cristian Morales-Opazo (FAO) reviewed the document. The document builds on a previous version of the MAFAP public expenditure methodology, developed during MAFAP phase I (2009-2013), which itself was adapted from the work of Joanna Illicic-Komorowska (OECD). It has also benefited from the discussions with country partners on public expenditure analysis in the MAFAP lessons learned workshop held in Addis-Ababa in June 2013. Specific examples have been taken from multiple MAFAP technical notes and databases on public expenditure analysis. All these are available on the MAFAP website.

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For more information, please visit the MAFAP's website at http://www.fao.org/mafap

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List of Acronyms

CAADP	Comprehensive Africa Agriculture Development Programme
COFOG	Classification of the Functions of Government
DGPER	Rural Economics Division (Direction Générale de la Promotion de l'Economie Rurale in French)
EC	European Commission
FAO	Food and Agriculture Organization of the United Nations
IFPRI	International Food Policy Research Institute
IMF	International Monetary Fund
MAFAP	Monitoring and Analysing Food and Agricultural Policies
NGO	Non-Governmental Organization
OECD	Organisation for Economic Co-operation and Development
PEA	Public Expenditures in Support of the Food and Agriculture Sector
PEAPT	Public Expenditures in Support of the Food and Agriculture Sector, excluding administrative costs (policy transfers)
PER	Public Expenditure Review
PPMED	Policy, Planning, Monitoring and Evaluation Department
ReSAKSS	Regional Strategic Analysis and Knowledge Support System
UN	United Nations
USAID	United States Agency for International Development
VAT	Value Added Tax
WB	World Bank

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I. MAFAP Agricultural Public Expenditure Analysis: general overview

The Food and Agriculture Organization (FAO) of the UN is initiating the second phase of the Monitoring and Analysing Food and Agricultural Policies (MAFAP) program that extends from 2014 to 2019. During the first phase of the program, implemented from 2009 to 2013, FAO worked with governments and national policy research institutes in ten African countries to create a consistent set of analyses that assess the effects of policies on prices in key agricultural value chains and on public expenditure. In addition, FAO developed national capacity to institutionalize policy monitoring in national institutions, promoting evidence-based policymaking that is conducive to agricultural development.

Monitoring agricultural and food policies and their effects is a fundamental part of the policy process. Government actions influence agricultural prices directly, through trade and price policies, and indirectly, through intervention in other sectors as well as macroeconomic decisions that change the relative taxation between agricultural and non-agricultural sectors. Thus, even when considering policy reforms in other sectors, knowing how this will affect incentives or taxation in the agricultural sector is essential because of the strong impact that they may have on welfare and food security. In Phase II, MAFAP will be working even more closely with partner countries and with governments to focus on policy priorities, building on inclusive policy dialogue. Furthermore, MAFAP will support governments in the articulation of alternative policy reform options and in analysing the costs and benefits of those reforms. In this way, governments will be in a better position to assess and approve policy changes based on reliable and relevant evidence.

In countries where agriculture constitutes such a large share of trade and of the economy as a whole, agricultural trade and price policy reforms more directly affect the income and welfare of the population as well as the reallocation of production factors such as labour and land (Magrini et al., 2015 and MAFAP, 2013a). The objective of this chapter is to provide a clear presentation of the methodology used by MAFAP to monitor and analyse public expenditures in support of food and agriculture (PEA). The first section provides a general overview of the MAFAP PEA work by defining its objective and scope while the second section presents the theoretical underpinning of MAFAP PEA monitoring and analysis.

1.1 Objective of MAFAP Public Expenditure Monitoring and Analysis[1]

Governments from developing countries often lack organized information that would enable them to systematically analyse the performance of expenditures affecting the food and agriculture sector (UN, 2014). Key actors at national level recognize the need for the availability of such information on a regular basis in order to make rational, evidence-based policy choices, and that the development of appropriate indicators is an important prerequisite for policy analysis and efficient budgetary processes.

The need to fill these information gaps is particularly important given the increasing recognition of the role that the agricultural sector can play in raising incomes, reducing poverty and improving food security (OECD 2010, 2012), and the range of policy commitments that have flowed from that change in policy thinking. For example, the African Union's (AU) 2003 Comprehensive Africa Agriculture

[1] Most of Part 1 is extracted from Ilicic-Komorowska, J., 2011.

Development Programme (CAADP) framework sets a target of 6 percent for agricultural growth and under the Maputo Declaration (AU, 2003) its members are committed to allocate at least 10 percent of public expenditure to agricultural and rural development. Together with the 6 percent growth target, this commitment was renewed in the 2014 Malabo declaration, which also pointed out the development of knowledge and data generation mechanisms as crucial for policy efficiency (AU, 2014, p. 58). Also, the UN emphasizes data management and analysis as essential in the process of designing policies that are supportive of the Millennium Development Goals (UN, 2014a, p. 6-7) and has been underlined in the recent proposal for the Sustainable Development Goals of the post-2015 agenda (UN, 2014b, p. 24). Lastly, as aid and national resources allocated to agriculture increase, it is important to put in place systems for monitoring the effectiveness of various types of expenditure.[2]

The PEA indicators proposed by MAFAP seek to keep track of both the level and composition of public expenditures in support of food and agricultural sector development, and to establish a link between aid allocations and national expenditures. The MAFAP-PEA indicators aim to assess whether resources are being allocated to priority areas, whether they address investment needs, and whether they are consistent with government policy objectives. They also reveal whether aid allocations are coherent with national priorities. Moreover, the detailed nature of the MAFAP indicators permits investigation into the incidence of PEA on agricultural growth, poverty reduction and other development variables, contributing to further research and analysis in that domain (see e.g. Elías, 1985, Hazell and Thorat, 2000, Fan, Zhang and Zhang, 2000, Fan et al., 2009, Mogues et al., 2012).

In addition, the MAFAP PEA indicators complement the MAFAP price incentives indicators (MAFAP, 2015), in accordance with the fact that they are derived from the OECD Producer Support Estimate (PSE) methodology used to measure the level of support given to the agricultural sector in OECD member states (OECD, 2008). While the MAFAP price incentives indicators and analyses permit the study of the effect of market and price policies on prices (output and input side) across agricultural value chains, the MAFAP PEA indicators and analyses allow the inclusion of policy transfers to agriculture (input side) in the analysis of the overall support to the food and agriculture sector (broadly defined to include rural development). Both components are necessary to undertake a comprehensive policy analysis, including an assessment of policy coherence with respect to the development objectives stated by governments.

1.2 Scope

The methodology proposes to capture all public expenditures in support of food and agricultural sector development, ideally going back a minimum of nine years. That includes expenditures from the national budget undertaken by either a central or regional government, regardless of the ministry or agency that implements the policy, and external aid provided either through local governments or specific projects and programmes conducted by development partners.

Public expenditures considered in the MAFAP-PE methodology are those of the food and agricultural sector, including forestry and fisheries. In addition, the MAFAP-PE methodology includes all public expenditures in rural areas, as they may also play an important role in agricultural sector development, even if they are not specific to the sector. The information on public expenditures in

[2] This point is regularly brought forward in the global discussion on aid effectiveness (see Accra Accord, 2008, Paris Declaration and Accra Agenda for Action, 2008, and Busan Partnership, 2012).

rural areas also aims to establish a view of a country's general policy environment and whether there may be a pro or anti-rural bias in expenditures on such significant areas as infrastructure, health and education.

It is important to note that the AU and the New Partnership for Africa's Development (NEPAD) recommend African countries to report their expenditures according to the United Nations Classification of the Functions of Government (COFOG).[3] In particular, the NEPAD guidelines for the computation of the share of agricultural expenditure within total public expenditure, in order to monitor compliance with the Maputo/Malabo target, use COFOG definitions. Although the MAFAP PEA classification is COFOG-compatible, in the sense that it broadly distinguishes between agriculture, fisheries and forestry[4], it serves a different purpose. Indeed, it is primarily designed as an analytical tool, and not as a reporting tool. In any case, COFOG categories can be reconstructed from the MAFAP categories, as the latter are more disaggregated (for instance, to cross-check expenditure figures).

1.3 MAFAP and other public expenditure work

The MAFAP Public Expenditure Monitoring and Analysis is complementary to other public expenditure works, particularly the Agriculture Public Expenditure Reviews (AgPERs) of the World Bank and the public expenditure analyses of the Regional Strategic Analysis and Knowledge Support System (ReSAKSS). Other initiatives dedicated to PEA data, monitoring and analysis in Africa include the Statistics of Public Expenditure for Economic Development (SPEED), the Agricultural Science and Technology Indicators (ASTI), OECD's Creditor Reporting System (CRS), the World Bank BOOST initiative and FAO's Government Expenditure on Agriculture (GEA) initiative. Additional information on these initiatives can be found in IFPRI et al. (2013).

MAFAP has also produced a detailed review of public expenditures monitoring and analysis initiatives in Africa, including MAFAP itself (see FAO, 2015). MAFAP's main contributions to public expenditure monitoring and analysis are as follows:

- The establishment of a monitoring and analysis system for PEA through the creation of partnerships and capacity building within national Ministries or research institutes.
- PE indicators are comparable across countries since the monitoring system is based on the same data collection, classification and analysis in all MAFAP countries.
- The MAFAP classification allows for a disaggregated analysis of public expenditure that considers how measures are implemented, rather than the objectives stated in the accounting system. This allows analysts to distinguish the various economic characteristics of expenditure measures, and to analyse the incentives they provide to agricultural sector development.
- The methodology also allows for the analysis of expenditures according to the commodity (or groups of commodities) they intend to support.

[3] This recommendation is formulated in two guidance notes (see AU/NEPAD, 2005, 2014). For more information on COFOG, see IMF (2014).

[4] See Ilicic-Komorowska (2010), p. 7. Additional information on the role of COFOG with respect to MAFAP and other initiative dedicated to agriculture public expenditure monitoring and analysis in Africa, see Mas Aparisi et al. (2014).

- The indicators of public expenditure can be integrated into the calculation of MAFAP price incentive indicators, in order to assess the level of support for producers (see MAFAP, 2015) and the overall coherence of agricultural policies in the country.

2. Theoretical background[5]

2.1 Expenditure measures included

PEA monitoring and analysis under MAFAP captures all expenditure measures that generate explicit or implicit monetary transfers in support of food and agricultural sector development. Monetary transfers towards food and agriculture are thus systematically considered whether they support the agricultural sector through private goods (e.g. input subsidies), global goods (e.g. research) or indirectly (e.g. rural health).

By contrast, general expenditure measures that target the entire economy are not considered, even if they generate monetary transfers to the agricultural sector.

Expenditure measures are classified according to the way in which they are implemented and not on the basis of their objectives or economic impacts. This last point is extremely important and is at the core of the MAFAP classification of public expenditure.

2.2 MAFAP classification

In order to capture all public expenditures in support of the food and agricultural sector, the MAFAP programme has established the following distinctions:

i. A broad distinction between expenditures that are agriculture-specific (direct support for the agricultural sector), agriculture-supportive (indirect support for the agricultural sector) and non-agricultural.
ii. Within the agriculture-specific category, a distinction between support for producers and other agents in the value chain (e.g. input subsidies), and general or collective support for the sector (e.g. research). The agents in the value chain include farmers (producers), input suppliers, processors, consumers, traders and transporters.

Agriculture-specific expenditures generate monetary transfers to agricultural agents or the sector as a whole. Those agents (or the sector as a whole) must be the only, or the principal recipient of the transfers generated by the expenditure measure.[6] Agriculture-supportive measures are not strictly specific to the agricultural sector but have a strong influence on agricultural sector development such as investment in rural education or rural health. All measures that meet these criteria are considered in the analysis, regardless their nature, objectives or perceived economic impacts.

The detailed classification of support follows the OECD's principle of classifying policies according to their economic characteristics (i.e. the way they are implemented), which provides the basis for

[5] Most of Part 2 is extracted from Ilicic-Komorowska, J., 2011.
[6] Whether they are the principal recipient is based on a qualitative assessment.

further policy analysis (OECD, 2008).[7] The categories of the MAFAP-PE methodology, however, are designed to reflect the types of policies applied in Low and Middle Income countries (LMIC), especially in countries under the MAFAP program (see annex x). The categories proposed in Box 1 have been defined based on the experiences of various agencies, including FAO (e.g. FAO, 2006), that have worked on public expenditures in developing countries. Furthermore, drawing on the OECD's experience, the proposed classification seeks, as much as possible, to distinguish between policies providing private goods and those providing public goods, given their different economic effects.[8]

Box 1 – MAFAP classification of public expenditures in support of the food and agricultural sector[9]

1. Agriculture-specific expenditure – monetary transfers that are specific to the agricultural sector, i.e. agriculture is the only, or principal, beneficiary of a given expenditure measure

1.1 Payments to agents in the food and agriculture sector – monetary transfers to **individual** agents in the food and agriculture sector

1.1.1 Payments to producers – monetary transfers to individual agricultural producers (farmers)

A. Production subsidies based on outputs – monetary transfers to agricultural producers that are based on current output of a specific agricultural commodity

B. Input subsidies – monetary transfers to agricultural producers that are based on on-farm use of inputs:

B1 - Variable inputs (seeds, fertiliser, energy, credit, other) – monetary transfers reducing the on-farm cost of a specific variable input or a mix of variable inputs

B2 - Capital (machinery and equipment, on-farm irrigation, other basic on-farm infrastructure) – monetary transfers reducing the on-farm investment cost of farm buildings, equipment, plantations, irrigation, drainage and soil improvements

B3 - On-farm services (pest and disease control/veterinary services, on-farm training, technical assistance, extension etc., other) – monetary transfers reducing the cost of technical assistance and training provided to individual farmers

C. Income support – monetary transfers to agricultural producers based on their level of income

D. Other payments to producers – monetary transfers to agricultural producers individually for which there is insufficient information to allocate them into the above listed categories

1.1.2 Payments to consumers – monetary transfers to final consumers of agricultural commodities individually in the form of:

E. Food aid – monetary transfers to final consumers to reduce the cost of food

F. Cash transfers – monetary transfers to final consumers to increase their food consumption expenditure

G. School feeding programmes – monetary transfers to final consumers to provide free or reduced-cost food in schools

H. Other payments to consumers – monetary transfers to final consumers individually for which there is insufficient information to allocate them into the above listed categories

1.1.3 Payments to input suppliers – monetary transfers to agricultural input suppliers individually

1.1.4 Payments to processors – monetary transfers to agricultural commodities processors individually

1.1.5 Payments to traders – monetary transfers to agricultural traders individually

1.1.6 Payments to transporters – monetary transfers to agricultural commodities transporters individually

1.2 General support to the food and agriculture sector– public expenditures generating monetary transfers to agents of the agro-food sector **collectively**

I. Agricultural research – public expenditures financing research activities improving agricultural production

J. Technical assistance – public expenditures financing technical assistance for agricultural sector agents collectively

K. Training – public expenditures financing agricultural training

L. Extension/technology transfer – public expenditures financing provision of extension services

M. Inspection (veterinary/plant) – public expenditures financing control of quality and safety of food, agricultural inputs and the environment

N. Agricultural infrastructure– public expenditures financing off-farm collective infrastructure

[7] The fact that MAFAP classifies policies according to their economic characteristics should not be confused with the distinction made by the IMF between *economic* and *functional* classifications of *expenses*. In the IMF Government Finance Statistics (GFS) Manual (IMF, 2014, p.114), the following definitions are provided: "the economic classification of expense identifies the types of expense incurred according to the economic process involved" and "the functional classification of expense provides information on the purpose for which an expense was incurred". In this regard, the COFOG classification is functional in nature. However, the MAFAP classification considers policies and information on the way in which they are implemented (which can be both quantitative and qualitative) as the starting material for the attribution of the PEA categories. This is a consequence of the fact that the MAFAP classification is an *analytical* tool and not a *reporting* tool. Therefore, the distinction between functional and economic classifications in the sense given by IMF does not apply to the MAFAP classification, contrary to what could be suggested by the indication that policies are classified by function of their economic classification.

[8] In order to help the analyst in classifying expenditures measures using the MAFAP PEA categories, examples and reminders are provided in Annex 1 – Examples and reminders for all MAFAP categories.

[9] The "non-classified" categories were formerly labeled as "other". It was considered that this label was misleading, as it gives the impression that it encompasses "other categories". It therefore has been replaced.

N1. Feeder roads – public expenditures financing feeder roads

N2. Off-farm irrigation – public expenditures financing off-farm irrigation

N3. Other off-farm infrastructure – public expenditures financing agricultural infrastructure that are not feeder roads or off-farm irrigation

O. Storage/public stockholding – public expenditures financing public storage of agro-food products

P. Marketing – public expenditures financing assistance in marketing of food and agriculture products

Q. Other general support to the food and agriculture sector – other transfers to the agro-food agents collectively for which there is insufficient information to allocate them into above listed categories

2. Agriculture-supportive expenditure – public expenditures that are not specific to agriculture, but which have a strong influence on agricultural sector development

R. Rural education – public expenditures on education in rural areas

S. Rural health – public expenditures on health services in rural areas

T. Rural infrastructure – public expenditures on rural infrastructure

T1. Rural roads – public expenditures financing rural roads

T2. Rural water and sanitation – public expenditures financing rural water and sanitation

T3. Rural energy – public expenditures financing rural energy

T4. Other rural infrastructure – public expenditures financing rural infrastructure that are not rural roads, rural water and sanitation, rural energy and other rural infrastructure

U. Other support to the rural sector – other public expenditures on rural areas benefiting agricultural sector development for which there is insufficient information to allocate them into above listed categories

Total expenditure in support of the food and agriculture sector (excluding administrative costs) (policy transfers, PEAPT): sum of agriculture-specific and agriculture-supportive expenditure (1+2)

Identifiable administrative costs for the food and agriculture sector: administrative costs include costs of formulation, implementation and evaluation of agricultural policies

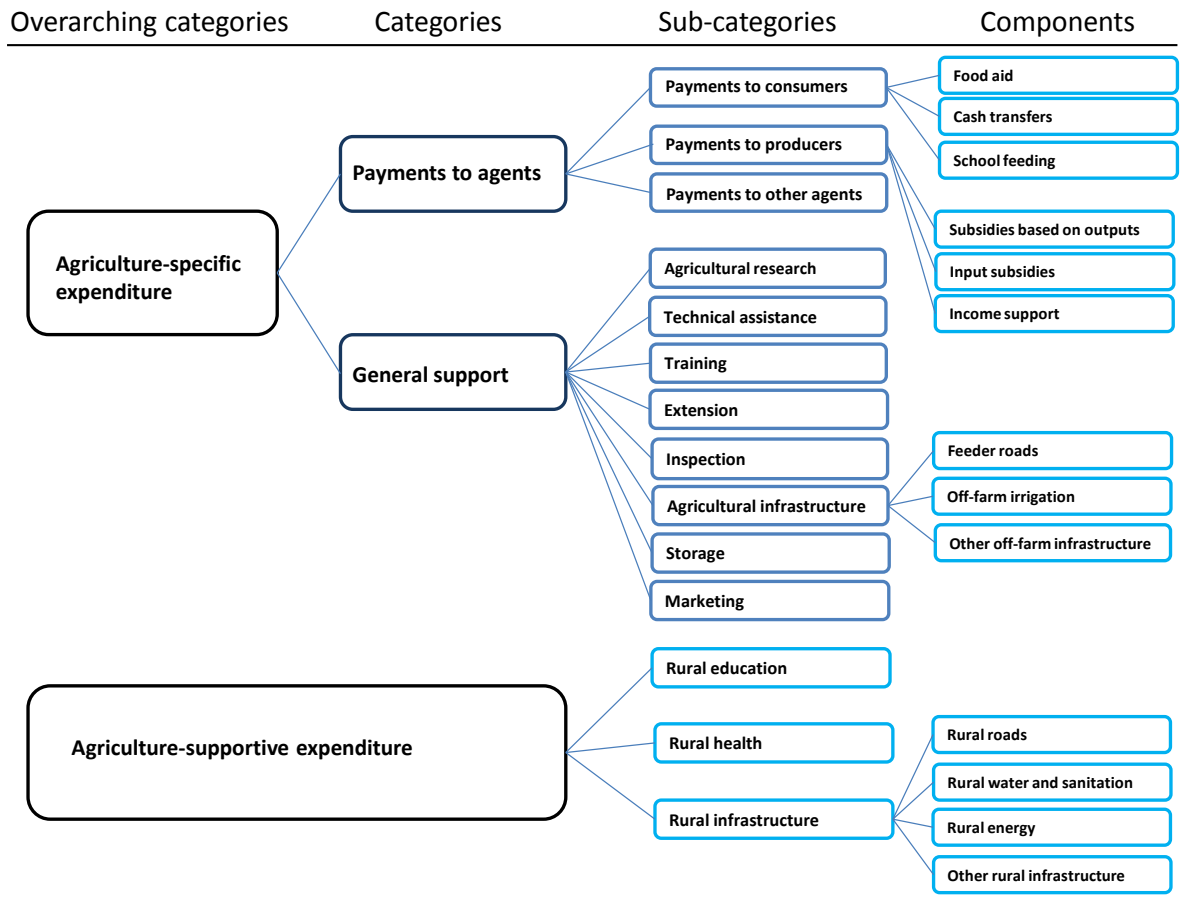
Total expenditure in support of the food and agriculture sector (including administrative costs) (PEA): sum of agriculture-specific expenditure, agriculture supportive expenditure and identifiable administrative costs for the food and agriculture sector (1+2+identifiable administrative costs for the food and agriculture sector).

The above classification encompasses all support for agriculture. While direct support for producers – input subsidies, equipment, cash, etc. – and other agents is captured in category 1.1, collective support - research, technical assistance, agricultural infrastructure, etc. - is captured in category 1.2. Both categories are under the overarching category 1, which relates to policies in direct support of the food and agricultural sector.

Policies that benefit the agricultural sector indirectly are taken into account in the overarching category 2. Rural health, rural education and rural infrastructure (rural energy, rural roads, etc.) fall under category 2.

The hierarchy of categories is not as easy to distinguish when looking at Box 1. Another schematic way to look at it is presented below in Figure 1.

Figure 1 – Schematic view of MAFAP public expenditure categories



Source: Authors

Transfers in support of the food and agricultural sector development may be provided in two forms: actual budgetary transfers, such as production subsidies, and the revenue foregone by governments such as tax concessions. The MAFAP-PE methodology includes both types of transfers, even though it often proves highly difficult to quantify and classify revenue foregone.

2.3 Estimating budgetary transfers

Complete coverage of institutions, administrative levels and financing instruments

The PE methodology used in MAFAP seeks to identify all budgetary expenditures in support of the food and agriculture sector, regardless of the source of financing (national versus external aid). All financing through public institutions is covered as implementation and funding of some measures occurs outside the agricultural ministries. Therefore, our PE methodology uses various expenditure data sources: Agriculture and Finance Ministries (mainly), but also other line ministries (Education, Health, Roads, etc.). Furthermore, funding at all administrative levels are considered as many relevant policies may be financed at various levels of government (central, state, district, regional). Finally, all public finance instruments are covered, regardless of whether they come from the regular budget or are financed with extra-budgetary funds that do not constitute part of the regular national budget but are used for implementation of specific programmes.

Box 2 – Examples of institutional coverage, administrative levels and financing instruments

- Example 1: School feeding programmes (agriculture-specific expenditure)

Most agriculture-specific expenditure will be part of the Ministry of Agriculture budget. However, this may not always be the case. For instance, school feeding programmes (category G) will often be financed through the budget of the Ministry of Education or Health rather than the Ministry of Agriculture. In some countries, such as Mali, the Ministry of Finance tracks policy measures related to agriculture even when they are not financed by the Ministry of Agriculture. In such cases, school meal programmes can be identified easily. However, not all countries have the same financial system. The MAFAP PEA analyses cover all expenditures related to agriculture, even those financed outside of the Ministry of Agriculture.

- Example 2: Rural infrastructure (agriculture-supportive expenditure)

Oftentimes, agriculture-supportive expenditure (rural development) will not be in the Ministry of Agriculture budget. This can be the case for rural energy (Ministry of Energy), rural education (Ministry of Education), rural health (Ministry of Health) and rural roads (Ministry of Transport).

- Example 3: Rice Initiative in Mali

Some expenditures may not be included in the national regular budget. This is the case for special governmental programmes, such as the Rice Initiative in Mali. That initiative, although it represents an important share of national expenditure, is financed through a special fund that does not appear in the Ministry of Finance's books for agricultural expenditure. In this case, MAFAP will include the special fund accounts as an additional data source.

- Example 4: District level funding in Uganda

In most African countries, decentralization is an ongoing process. As such, certain projects and programmes will be implemented not by the central government but by other authorities such as a district, a region, etc. For example, in Uganda, the National Agricultural Advisory Services (NAADS) are partly funded and implemented by local governments. The budgeted and actual expenditures at the district level for the NAADS were identified by MAFAP and counted in the analysis.

Source: authors

Budget planning versus actual spending

Actual spending is the primary target of PEA data collection in MAFAP, although budget allocation data is also collected. When estimations are done on an annual basis, the amounts effectively disbursed may not be available for the most recent years. In this case, budget allocations are used as a proxy and are updated the following year to reflect actual spending.

MAFAP also classifies expenditures according to source: either donor or national. This allows for comparison of budget allocations and actual spending by source to establish the efficiency of public expenditures and the importance of aid (see "2.5. Aid and public expenditure" below for details).

Box 3 – Examples of actual versus budgeted expenditures

- Example 1: Burkina Faso

In Burkina Faso, the state budget accounts report both budgeted and actual expenditures for all projects and programmes, updated with a one-year lag. In collaboration with the Ministry of Finance, it was thus possible for MAFAP to obtain actual expenditure data.

- Example 2: Kenya

In Kenya, actual expenditure is updated with a two-year lag, and is difficult and sensitive to obtain. Also, some expenditure is reported as "actual" in the budget books despite not being actual disbursements in the MAFAP sense, i.e. money actually spent. This misguiding label has proven time-consuming for the MAFAP analysts, and shows that obtaining reliable actuals often proves difficult.

Treatment of identifiable administrative costs for the food and agriculture sector

Identifiable administrative costs for the food and agriculture sector include the costs of formulation, implementation and evaluation of agricultural policies and are generally not included in the calculations of total expenditure in support of the food and agriculture sector. This is because they are not policy transfers as such. However, when support is provided via services (e.g. extension, training, research or inspection), expenses associated with delivery of the services (e.g. salaries of extension advisors, salaries of inspection officers or researchers) are included in the calculations.

The data on administration costs not included in the public expenditure calculations is collected separately. This makes it possible to establish the share of administration costs in overall government spending and contribute to analysis of the efficiency of public expenditures.

Box 4 – Examples of treatment of administration costs

- Example 1: Irrigation project concept phase

For many projects, such as an irrigation project, detailed activities include a concept phase that consists of project design. The cost of the concept phase is 100 percent composed of wages to the persons in charge of designing the project. However, MAFAP does not count these as administrative costs. Indeed, the designing of the project is a service that allows for implementation of the irrigation activity. It is thus counted as irrigation (category N or B2).

- Example 2: Researchers' wages

Usually, a large share of a research project's funds will be allocated to researchers' wages. Such wages will often be reported under the administrative costs section of the project's budget or description. However, the MAFAP analysis will consider the wages as research, since they allow for implementation of the research activity.

Source: authors

Treatment of one-off investments versus recurrent expenditures

MAFAP-PE methodology distinguishes between investments and recurrent expenditures[10] by using actual spending information. If actual expenditure data is not available, then budget allocations need to be used instead and the overall budget for a given investment needs to be allocated over time according to the investment implementation plan. Conceptually, it is similar to the commitments versus disbursements issue and is handled in the same way.

It is important to note, however, that one-off investments have different economic impacts than recurrent expenditures. Although investment funds may be disbursed over a relatively short time period, the benefits may be enjoyed over several consecutive years. In the public expenditure classification we are seeking to record actual year-to-year spending to analyse the government's efforts to enhance sector development. However, when analysing the profitability of investments, those investments will need to be allocated over time. Standard methods, such as net present value (NPV)[11] may be employed to evaluate investments at hand.

2.4 Estimating support based on revenue foregone

Support may be provided in forms that do not imply actual transfers from the government's budget, but at the cost of the revenue foregone either by the government or other economic agents. Given that such support creates implicit transfers to producers (or other agricultural sector agents) they are also estimated and included in the MAFAP classification of public expenditures.

The measurement of transfers based on revenue foregone is largely an empirical task, involving assumptions and judgement about the appropriate reference against which to measure the transfer. Therefore, a good understanding is needed of both the implementation mechanisms underlying such policies and the broader economic context.

Calculation of revenue foregone is carried out after the calculation of the policy transfers has been validated.

There may be several types of support based on revenue foregone, such as tax concessions, preferential lending (from banks to agricultural sector agents) or administered input prices (e.g. a state owned enterprise that charges lower prices for inputs to agricultural producers). In the LMIC context, tax concessions will be the most common type of support that generates revenue foregone transfers to agricultural agents. Tax concessions may apply to income, Value Added Tax on purchased inputs, on fuel taxes, etc. These items are included in estimated support if they address the agricultural sector specifically or if the agricultural sector is their main beneficiary, based on a qualitative assessment.

Tax concessions are understood as a provision of fiscal advantage to a group of individuals (here agricultural agents) or to a particular activity (here agricultural sector activities) by reducing tax liability, and may take the following forms:

[10] The MAFAP distinction between investments and recurrent expenditures builds on the distinction between capital and current transfers, following the definitions provided in the 2008 *System of National Accounts* (EC, IMF, OECD, UN and WB, 2009, pp. 618-619) and in the 2014 GFS Manual (IMF, 2014, pp. 403-405).

[11] The nominal amount outstanding minus the sum of all future debt-service obligations (interest and principal) on existing debt discounted at an interest rate different from the contracted rate.

- Exemptions: amounts excluded from the tax base
- Allowances: amounts deducted from the benchmark to arrive at the tax base
- Credits: amounts deducted from tax liability
- Rate relief: a reduced rate of tax applied to a class of taxpayers or taxable transactions
- Tax deferral: a relief that takes the form of a delay in paying tax

Each of these measures provides economic incentives to agricultural agents in a manner similar to a programme involving budgetary expenditure.

The support associated with tax concessions can be measured by establishing a counterfactual (i.e. a group of individuals or an activity that does not benefit from this preferential taxation) and quantifying the monetary value of the reduction in tax liability by comparing the value of tax revenues from the counterfactual and the tax concession target group. A complete and reliable quantification of tax concession can be a complex empirical exercise requiring significant amount of resources and information. Therefore, only those that unambiguously provide benefits to agricultural sector and can be estimated within a reasonable time frame and with adequate accuracy are captured.

2.5. Aid and public expenditure

Mapping aid onto national expenditures

The MAFAP PE Monitoring and Analysis methodology aims to cover all public expenditure directed towards agriculture, whether it is financed by the government or donors.

Donor contribution to public expenditure can be traced directly from the Ministry of Finance, Ministry of Agriculture and implementing Ministries in charge of projects/programmes directly or indirectly related to food and agriculture. Donor disbursements will indeed be clearly separated from national disbursements for all projects and programmes in the budget books.

It may be the case, however, that certain donors do not go through the State financial system when implementing a project or programme in the country (off-budget spending). For instance, the analyst may discover that a project reported by the Ministry of Agriculture's unit in charge of cooperation with donors does not appear in any budget book. In that case, it will be difficult to capture this expenditure. The only way to do so will be by directly contacting donors through the relevant Government focal point to obtain budget statements.

Non-Governmental Organizations' (NGOs) contributions to food and agriculture are not counted in MAFAP PE Analysis, except in rare exceptions. Indeed, NGOs very often receive funds from private sources, which is beyond the scope of the MAFAP analysis, as it focuses on public expenditure. For those NGOs that are 100 percent financed by public funds, their contribution can be added to the analysis, provided their actual expenditure directed towards food and agriculture is clearly identified.

Types of external aid

Donors provide aid via grants and loans. It is important to distinguish between these two types of aid, as loans may have important impacts on the economy via the accumulation of debt and debt servicing requirements. Moreover, short-term loans for current expenditures have significantly different economic effects than longer-term loans for investment projects. The difference between

loans and grants has been recorded, typically in national budget books but sometimes in other sources. In such cases, this distinction is clearly made in the database and analysis.

2.6 Main indicators for MAFAP Public Expenditure Analysis

Areas covered

The MAFAP Public Expenditure Monitoring and Analysis allows the computation of a variety of detailed indicators, resulting in a robust analysis of public expenditure in a given country. The main indicators that are generated concern the following areas:

- **Level**

The MAFAP analysis indicates the level of public expenditure in support of the food and agricultural sector, both in terms of allocated and actual expenditure, and in absolute and relative terms. It also clarifies the share of policy transfers and administrative costs, recurrent and capital expenditure, donor and government contribution, loans and grants, and actual and budgeted expenditure. All expenditure related to the food and agricultural sector is considered, including fisheries, forestry and rural expenditure (health, education, infrastructure, energy).

- **Composition**

The MAFAP methodology goes beyond the aggregated level and aims to generate a wealth of details on the composition of expenditure. This represents the core of the MAFAP Public Expenditure Monitoring and Analysis.

As stated in section 2.2, the OECD-derived MAFAP analysis looks at the economic characteristics of policy measures i.e. the way they are implemented. The MAFAP set of indicators includes absolute and relative values on the composition of public expenditure to agriculture by project and programme, and by activities actually implemented within these projects and programmes.

Another interesting result of MAFAP analysis in terms of composition is the disaggregation of public expenditure by commodities and by groups of commodities supported.

Combining the disaggregated results for specific commodity and activity support allows for the computation of a wealth of additional information, such as the share of one or several projects in the total expenditure in support of the food and agricultural sector, the share of one or several projects within spending on one category, the share of one or several projects in the total expenditure on one commodity or the distribution of categories within spending on one commodity.

As an example, the MAFAP PEA analysis enables the determination of the share of input subsidies in the total budget for food and agriculture, the share of input subsidies that goes to a specific commodity, or the share of certain projects/programmes in the total input subsidy expenditure.

- **Share of aid**

The MAFAP methodology also includes indicators on the share of aid in each project and programme, category of activity and supported commodity.

Quantitative indicators are combined with qualitative data on the budgetary process and on the objectives and activities of projects and programmes to produce a public expenditure technical note.

Computed indicators

More specifically, the following indicators are generated by the MAFAP PEA template[12]:

- Total level of PEA, defined as the sum of policy transfers and administrative costs;
- Share of PEA within total national public expenditures;
- Disaggregation of public expenditures in support of the food and agriculture sector, excluding administrative costs (policy transfers, PEAPT), within MAFAP classification categories (see Box 1);
- Share of donor and national spending within each MAFAP classification category and in PEAPT, ;
- Share of recurrent and investment spending within each MAFAP classification category and PEAPT;
- Budgeted and actual amounts for each MAFAP classification category and within PEAPT, for each year;
- Disaggregation of agriculture-specific expenditures by commodities (single, group and all).
- Additional quantitative indicators built on an ad-hoc basis (for instance, indicators permitting the disaggregation of spending on one commodity into several MAFAP classification categories);
- Qualitative information for each activity within the reported projects and programmes: name of public expenditure measure, data source, responsible ministry or implementing agency, type of budget, loan or grant, detailed description, associated subsector, associated commodity, source of funding, government level and associated MAFAP category.

[12] The list is adapted from FAO, 2015.

Annex 1 – Examples and reminders for all MAFAP categories

In order to help the analyst, examples for each of the classification categories are presented in the table below.

Administrative costs	The analyst will often classify categories as administrative costs. However, as explained above, administrative costs in the MAFAP typology differ from administrative costs as usually reported in budget accounts. The running costs of projects that deliver agricultural services should not be counted in administrative costs, but associated with the category of this service. For instance, the wage of a researcher is classified as research (see I), the cost of renovating an agricultural school is counted as training (see K), the cost of a feasibility study for an irrigation infrastructure project that is being implemented should be counted as agricultural infrastructure, or capital (see N, B2). However, the running costs of Ministries, the training of Ministry officials, the projects that consist in designing a new agricultural policy or strategic framework should be counted as administrative costs.
A. Production subsidies based on outputs	No production subsidies based on outputs were identified in the five MAFAP countries where the analysis was carried out. This category applies to monetary transfers to agricultural producers that are based on current output of a specific agricultural commodity.
B1. Variable inputs	Activities such as seed subsidies, fertilizer subsidies, and credit – including construction of a microfinance institution building and wages of employees, if subsidized by public money – should be included in this category. Indeed, the buildings/wages will support implementation of the activity (see section 2.3 on administrative costs). If the public monetary transfers support inputs that are not variable such as equipment, see B2.
B2. Capital	Activities such as equipment (e.g. fishing nets), machinery (e.g. threshers), on-farm irrigation and infrastructure, and cattle (e.g. draft animals) should be included in this category. Every activity, the primary short-term effect of which is to benefit individual farmers through capital, will be counted in B2. If an irrigation measure targets 500 farmers but involves on-farm improvements for each of those farmers (such as irrigation pipes, stone barriers, etc.) it is considered under B2. If a measure primarily affects a group of producers (e.g. micro-dams for irrigation, feeder roads, water reserve for livestock) it will be considered agricultural infrastructure (N).
B3. On-farm services	Activities such as on-farm training and technical assistance, and on-farm inspection and disease control should be included in this category. Every activity, the primary short-term effect of which is to benefit individual farmers through services, will be counted under B3. In MAFAP countries where the analysis was carried out, B3 mainly contains on-farm disease control policy measures.
C. Income support	This category was seldom used in the MAFAP analyses. However, it applied in some rare policy measures where producers received cash transfers or subsidies based on their level of income.
D. Food aid	Activities, such as food vouchers and cash transfers to buy food, should be included in this category. Several policy measures related to food aid may not be under the Ministry of Agriculture budget but under other Ministries. Also, several food aid projects/programmes will be implemented by the World Food Programme and may not be reported in the government budget accounts (as in Tanzania).
G. School meal programmes	School meal programmes will often be reported in budget accounts outside of the Ministry of Agriculture. In Burkina Faso, for instance, school meal programmes were financed through the Ministry of Education. We recommend checking UNICEF and World Food Programme projects in the country, as they are often the main donors funding school meal programmes (as in Tanzania and Burkina Faso).
1.1.3, 1.1.4, 1.1.5, and 1.1.6: Payments to input suppliers, processors, traders, and transporters.	These four categories have seldom been used in MAFAP analyses. The category 1.1.4, payments to processors, has been the most widely used of the four. It includes activities such as payments to milk processing units (Mali), payments to develop small processing industries (Tanzania), and payments to develop meat processing infrastructure (Mali). Category 1.1.3, Payments to input suppliers, was used in the case of Burkina Faso for a project supporting phosphate suppliers.
I. Research	Activities such as funding of crops or livestock research institutes, rural/agricultural economics institutes, and seed/crop variety/livestock breeding research projects should be

	included in this category. Funding of research facilities and paying the researchers' wages, should also be included under research and not administrative costs (see section on administrative costs). Payment of data collectors' wages for research projects should also be included under research.
J. Technical assistance	Activities such as collective assistance with farming techniques (Mali), collective assistance with improving seed use (Burkina Faso), and collective assistance with sustainable land management (Uganda) should be included in this category. In general, all activities that involve teaching agricultural techniques to agents working in the agricultural sector will fall under this category. If the activity is carried out on an on-farm basis, it represents a direct service to individual producers and should be counted under B3 rather than J. Wages for staff providing technical assistance, costs of transport for the staff and required vehicles, and the building of facilities are all part of the technical assistance service, that should be counted as J, and not as administrative costs.
K. Training	Activities such as funding of training institutes (Tanzania), collective classroom training on sustainable farming practices (Mali), accounting and farm management training (Uganda), and training of trainers should be counted as training. In general, all activities that involve agents working in agriculture and receiving group training will fall under this category. Training of civil servants working for the Ministry of Agriculture will be counted as administrative costs and not as training. The wages of staff providing training, the cost of training trainers, of transport and of required vehicles, and the building of training facilities should be counted as K, and not as administrative costs. It can be difficult to separate technical assistance from training. In theory, technical assistance is more focused on assistance with farming techniques in open air whereas training is considered more as classroom education.
L. Extension services	Activities such as farmer field schools and extension services provided on a collective basis should be included in this category. Extension services will often be similar to training (see description above).
M. Inspection	All inspection activities, the primary effect of which is collective and is not delivered on-farm (for on-farm inspection, see B3), should be included in this category; some examples are: funding of veterinaries (Burkina Faso), building of vaccination areas and laboratories (Mali), inspection of fish quality for marketing (Uganda), and inspection of drugs, cosmetics and medical devices at port of entry (Tanzania). Wages of staff providing inspection, costs of transport and required vehicles, and building of inspection facilities should be counted as M, and not as administrative costs
N. Infrastructure	Agricultural infrastructure is a complex category. First, a distinction must be drawn between agricultural infrastructure and rural infrastructure. Agricultural infrastructure refers to all infrastructure the primary effect of which is to support the agricultural sector. Where infrastructure is a collective good for the rural population (e.g. a dam for energy, planting of a forest, rural roads, etc.) it should not be counted in N, but in T (see category T). The externality (secondary effect) of the infrastructure should not be taken into account in the classification – for instance, if a well for livestock will benefit all villagers who want to drink water, it is nevertheless classified as agricultural infrastructure because its primary effect is to water livestock. Another distinction to be aware of is that between on-farm capital (B2) and infrastructure. Infrastructure that primarily benefits the sector as a whole, or agents on a collective basis, is considered agricultural infrastructure (N); and all infrastructure that primarily benefits individual producers (i.e. that is built on-farm) is considered capital for the farmer, and classified as B2. For example, a well that is built on a farm is capital (B2), and a micro-dam to irrigate a whole area is agricultural infrastructure. The other hurdle when using the Infrastructure category is that most agricultural infrastructure has been classified under other categories. Indeed, the primary effect of agricultural infrastructure is often related to another existing category. For instance, village market infrastructure can be classified as P (marketing), storage infrastructure as O (storage), training facilities as K (training), etc. In the end, most of the activities classified as N will be feeder roads (not rural roads – classified as T) and off-farm irrigation.
O. Storage	Activities related to storage, mainly the building of storage infrastructure and storage shops, payment of stock keepers' wages, and maintenance of warehouses should be included in this category.

P. Marketing	Activities such as the building of agricultural markets, support for marketing of agricultural products, support for commodity boards (tea, coffee, etc.) and support for enterprises should be included in this category. There can be a conflict of categories between training and marketing when an activity consists of training regarding a marketing strategy and marketing techniques (business management, etc.). In that case, the activity will be classified under marketing, as the training is intended for marketing and not agricultural production.
R. Rural education	Activities such as the building of schools in rural areas, school programmes in rural areas, and wages of rural teachers should be included in this category. School meal programmes should be counted in category G.
S. Rural health	Activities such as the building of rural hospitals, nurseries and medical centres, and the wages of rural doctors paid by the state should be included in this category.
T. Rural infrastructure	Activities such as the building and maintenance of rural roads, rural energy and rural water supply systems should be included in this category. It thus includes roads which connect two villages together, dams that primarily produce energy, and wells or water reservoirs that are primarily used for domestic purposes by the rural population (not for agriculture).

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