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Methodological guidelines for tracking public agricultural expenditure with illustrations from Zambia

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The signing of the Maputo Declaration in 2003 by African Union member states requiring them to allocate 10% of national budget to agriculture, necessitates a framework or system that tracks how much is being spent, where it is being spent, what it is being spent on and for whom, and how it has changed over time in relation to the set targets. This paper provides such a framework and illustrates its use using data from Zambia. It provides a concept and practical information to facilitate tracking of national public expenditure on agriculture. Data on public expenditure on agriculture are available from government budgetary records. Knowledge of the public agricultural system is argued to be an essential first step in tracking expenditures. The paper identified actors, functions of actors and relationships among actors within the public agricultural system. An additional proposed tool is a set of classifications of expenditures on agriculture enable grouping of different expenditures into policy-relevant dimensions. Documentation of all procedures and decisions made will help analysts employing similar measurements conduct comparisons over time and across boundaries and set the stage for sharing ideas and experiences, which eventually improve the standards of measuring public expenditure on agriculture.

Key words: Methodological guidelines, public spending, tracking, Zambia.

INTRODUCTION

Measuring public spending on agriculture needs a framework or system to guide the exercise. This paper identifies a suitable framework for measuring public expenditure flows towards the agricultural sector. The 2003 Maputo Declaration by African leaders called for an increase and more efficient use of resources in agriculture. Tracking public expenditure on agriculture is essential not only in setting agricultural performance objectives and benchmarks but in monitoring and evaluating the sector's development. When constructed, national expenditure accounts of agriculture help provide that information needed to improve public resource use efficiency. This paper forms the basis for a generic

approach for tracking public spending on agriculture to know how much is being spent, where it is being spent, what it is being spent on and for whom, how spending has changed overtime, and how these dimensions compare across administrative boundaries. The goal is to assist decision makers monitor progress on implementing the continental Comprehensive Africa Agricultural Development Program (CAADP) agreement. This agreement requires member states to allocate 10% of public spending toward agriculture. Apart from tracking the size of the budget, this guideline also raises the debate on how well the amount allocated is being spent. Good public agricultural resource management is a great compliment to agricultural development policy.

Although, private spending makes up a large share of total national agricultural spending, this paper focuses only on public spending. Public spending together with policies influences the level and composition of private

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spending. Public spending on agriculture is, therefore, a sub-total of national agriculture accounts. The government spending covered in this paper is that which is reflected in annual budgets including budget support from donors.

This paper provides a framework that administrative authorities can use to share information and improve standards for measuring public agricultural expenditure (PAE). The right way to account for specific expenditures in different administrative boundaries will differ. However, there is a need to ensure that expenditure data is compiled and presented in a consistent and standard manner. This paper sets the stage for sharing ideas and experiences of what needs to be included or dropped and how it will be classified. The paper uses agriculture expenditure estimates from Zambia for illustrative purposes only. The presentation of comprehensive data on public agriculture expenditure from Zambia is the subject of a follow-up study. Institutional differences between administrations suggest that international comparisons of assessments of expenditure should be made cautiously (IMF and World Bank, 2005).

Objectives of the study

The major objective of the study was to provide a concept as well as practical information on what to include and exclude when tracking national public expenditure on agriculture in developing countries.

The purpose of this exercise is to assist member states monitor:

1. Progress in implementing the 2003 Maputo Declaration; and
2. Allocation of public spending to various functions and uses.

The rules for making decisions are laid out to allow temporal as well as spatial comparability.

METHODOLOGICAL FRAMEWORK

Justification of the methodological framework

'Budget tracking' is about identification and reporting of budgeted and actual outlays (IMF and World Bank, 2005). To track the implementation of the Maputo Declaration, it is important to know first and foremost what qualifies to be PAE. This paper draws heavily from the International Monetary Fund (IMF), Government Financial Statistics Manual (GFSM), and other literature to identify the different types and classes of public expenses on agriculture.

The intended audience of this work includes government officials, civil society, private sector, trade unions, parliament, regional bodies and donors. The World Bank working jointly with IMF is at the frontier of developments in public expenditure management. Even though the World Bank shifted focus in the last decade from expenditure allocations and fiscal sustainability to institutional capacity, the earlier focus remains relevant to this guide. The Bank's public expenditure reviews continue to address issues of expenditure allocation and links to national poverty reduction. This paper disaggregates expenditures by function and economic use. Therefore, the paper is a relevant sub-analysis of what the Bank's Economic Management Network still does.

Spending reviews have become a common useful tool to tell and guide overall donor engagement given the trend toward overall budget support (Rajaram and Krishnamurthy, 2001). USAID, Department for International Development (DFID), European Union (EU) and other agricultural donors form part of the audience for this work. The Consultative Group on International Agricultural Research (CGIAR) centers led by International Food and Policy Research Institute (IFPRI) are developing analytical frameworks to measure impacts of government expenditures on economic growth (Fan et al, 2003). The Statistics Division of the Food and Agricultural Organization of the United Nations (FAO) took up the Africa Union (AU) task to offer technical support to help AU countries track public expenditure on agriculture. The result of the AU/FAO efforts was a technical guidance note developed in 2005. This paper complements the AU technical guidance note by giving a conceptual framework of "total" agricultural expenditure, alternative classes of public spending and an elaborate explanation of data issues and challenges.

IDENTIFYING AND CLASSIFYING PUBLIC SPENDING ON AGRICULTURE

Concept of public spending on agriculture

An overall picture of what a public agricultural system looks like is important to guide efforts in classification and measurement of the resource flows in the system. An early task in the development of an accounts framework on national public expenditure is to decide what types of spending to include and what types to exclude. This paper sets rules for making these decisions in order to allow for cross-country comparability of estimates as well as comparability of a country's estimates overtime.

National PAE encompasses all spending for activities whose primary purpose is to restore, improve and maintain agriculture for the nation and for individuals during a defined period of time (IMF, 2006). All such expenditure regardless of the public institution or entity providing for the agricultural activity should be counted.

The concepts advanced in this paper are borrowed extensively from earlier work on international standards and best practices for measuring national public health accounts. In 2003, the World Health Organization (WHO), the World Bank, USAID and other partners produced the Guide to Producing National Health Accounts, to help countries measure total spending on health. The public health profile and its resource flows described in the 'Producers' Guide' apply to any public sector. National Health Accounts (NHA) is an internationally recognized framework that provides a comprehensive guide to the estimation of national health expenses (De et al., 2004). The model of expenditure accounts, the New Harvard NHA Model, explains the flow of funds among four principal dimensions, namely (1) the financial sources, (2) the financial agents, (3) the end users or providers, and

Table 1. Flow of funds between funding sources and spending agents.

Spending agent	Primary/original funding source				Total
	S1	S2	S3	S4	
1	A	B			A+B
2	C				C
3		D	E		D+E
4				F	F
Total	A+C	B+D	E	F	G

Source: Adapted (De et al., 2004)

Table 2. Flow of funds between spending agents and service providers.

Service provider	Spending agent				Total
	1	2	3	4	
I	V		W		V+W
II		X			X
III			Y		Y
IV				Z	Z
Total	V=A+B	X=C	W+Y=D+E	Z=F	G

Source: Adapted (De et al., 2004).

(4) the end uses or functions.

Table1 shows the expenditure flows between sources of funds and spending agents. Funds from various sources (S1 to S4) get paid out to funding agents (1 to 4). Public sources of funds include tax revenue, international loans and grants from development partners. Spending agents include all ministries and agencies whose function is to deliver agricultural services. The column totals in Table 1 gives the total resources from each source. For example, funds from S1 add up to a total of A+C. The total funds from all sources are G. The row total gives the total resources given to a particular spending agent. For example, spending agent 1 receives a total of A+B funds. The total funds received by all spending agents equal G. Table 1 shows that the total funds released from all sources is equal to the total funds received by all spending agents, that is, G.

This model of expenditure accounts suits the flows of public resources for the agriculture sector well. Table 2 shows the flow of resources between spending agents (columns 1 to 4) and service providers (rows 1 to 4). Service providers are the various departments, including research, extension and others who receive funds from ministries. Spending agent 1 gives out a total of V resources to service provider. The total amount of resources (V) paid out by spending agent 1 equals thetotal funds released to the spending agent in Table 1, that is, V = A + B. In the end, the total amount of funds (G) released by the original sources to spending agents equals the amount paid out by the latter to service providers, that is, G (Table 2). This framework

allows PAE to be measured at any level. PAE can be measured from sources, spending agents and service providers. The total amount tracked is always the same regardless of the level at which it is measured. This is true in principle but may not be nearly achievable.

An alternative to the Harvard model is the OECD-System of Health Accounts. The latter model has all the dimensions of the Harvard model except for spending agents. 'According to Salem (2004), the former model is more dominating than the latter in low-and middle-income countries because it adapts well to pluralistic structures of financing common in these countries. The NHA framework enables international and inter-sectoral comparability while providing flexibility to tailor spending on national policy priorities.

Spending boundaries

Expenditure type boundaries

Direct public expenditure on activities, such as, agricultural research and extension are considered the core of an analysis of public expenditure on agriculture. When tracking, an attempt should be made to at least capture this core spending. Agriculture-related (indirect) activities, such as road construction, drought-mitigation activities, contribute to growth in agriculture but inter with other sectors, such as tourism or community welfare. Such agriculture-related expenditures are included in the total public expenditure on agriculture. But care should be

exercised not to include spending on non-agricultural activities even though the Ministry of Agriculture pays for them. Inclusion of non-agricultural activities will dilute the findings of an exercise tracking PAE. It is not enough to rely on the nature of the service provider to determine whether or not the expenditure belongs inside the PAE boundary. Certain activities conducted by the Ministry of Agriculture do not have agriculture as its primary intent and should be excluded from the expenditure on agriculture. Conversely, other activities performed by partial-budget ministries have agriculture as the primary purpose and should be included in the expenditure on agriculture. Decisions to accept or not to accept agriculture-related expenditures as agricultural expenditures are arbitrary. The goal is to be consistent overtime rather than chase after theoretical purity.

Space boundaries

Apart from expenditure type boundaries, boundaries can be stated in terms of space. The borders of the jurisdiction being observed define the space boundaries of expenditure. Spending by foreign governments toward a nation's agriculture is to be included but the nation's spending to other countries is excluded. Expenditures on agriculture by external agents such as bilateral and multilateral agencies should be included. Agricultural programs by donors and food aid import expenditures are part of this category. Government expenditures to other nations, which technically constitute 'exported' agricultural expenditure is to be excluded.

Time boundaries

Government expenditures are made in a given time period. The analyst must choose which period to attach all expenses to. The period is either a calendar year or a fiscal year. Occasionally, the calendar year may coincide with the fiscal year. Where expenditure data is reflected in more than one time period, only one time period must be used.

Another element of the time boundary involves the choice between accrual accounting and cash accounting. Ideally, PAE should use the accrual method where expenditures reflect both paid and committed expenditures. The time period when economic value is made is what matters rather than when the payment for the transaction takes place. When dealing with data sources using both accounting practices, the analyst should convert everything to one method. The AU/FAOteam uses the cash accounting system because it is common in African governments (NEPAD, 2005).

Once a judgment regarding treatment of a particular expenditure is made, the decision rule must be applied consistently from one year to the next in order to retain temporal comparability. This is important in order to discern true trends in PAE.

Classification of public expenditure on agriculture

Governments have two broad economic responsibilities, that is, to provide selected goods and services to the communities and to redistribute income and wealth. Governments fulfill these responsibilities through expenditures either classified functionally or economically.

Economic classification identifies expenses incurred when government produces, buys goods and services or transfers cash to households to buy goods and services. Governments, through parliament, approve different types of agricultural expenses or appropriations. Each appropriation relates to a specified economic expense and different economic classes of expenses are allocated to different appropriations. Economic classification provides information on different but approved uses.

On the other hand, functional classification of expenditures focuses on the roles, or socioeconomic objectives that government aims to achieve through various outlays. Functional classification provides information on the activity or type of service taking up the spending.

Economic classification

The appropriation types of government expenditure relevant for this paper include: compensation of employees of general government units; use of goods and services or output expenses; subsidies; consumption of fixed capital or capital expenditure; interest or borrowing expenses; grants; social benefits and other expenses.

Compensation of employees

This expense type is commonly known as Personnel Emoluments (PEs) and cover wages and salaries and social contributions during the accounting period. Wages and salary include payment in cash or in kind. Cash salaries and wages include extra payment for overtime, cost of living allowances, bonuses, transport and housing allowances. In-kind salaries and wages include meals and drinks, housing services, services of durables such as vehicles provided for the personal use of employees, net costs to government from the provision of goods and services to employees. Social contributions include payments made by government to social insurance schemes for social benefits of public service employees.

Use of goods and services

This expense type is commonly known as recurrent departmental charges (RDCs). RDCs consist of goods and services used in producing public goods and services. This includes purchase and rental expenses by government on tools, equipment, materials, supplies and other items used as inputs by employees to carryout their work within

the accounting year. This also includes goods and services used in periodic maintenance and repair of public agricultural assets. This is different from major improvements to fixed assets to increase capacity or to extend service lives which are gains of capital assets. Spending on goods and services for routine research, training and other activities, which brings benefits beyond the accounting period, is treated not as RDCs but acquisitions of capital assets. Spending on goods and services used by employees outside active duty and enjoyed by households to which employees belong is excluded but entered as compensation of employees (IMF, 2006). According to the GFSM, RDCs also include amounts payable to contractors and others who are not employees of government and refunds for travel and related expenses incurred when government employees report to work-stations.

Consumption of fixed capital

Government buys capital assets for use in several institutions. During the accounting period, the value of these assets reduces because of physical weakening, normal obsolescence or damage. Consumption is similar but not the same as depreciation. The former is depended on the current market value of the asset but the latter uses historic or acquisition value. Consumption spending is for assets such as infrastructure and major improvements to land. Using government storage decreases the current value of the remaining future rentals. The value of these capital assets declines as demand declines due to expected technological progress and presence of good substitutes. Loss of value because of exceptional events such as war and natural disasters is excluded.

Interest and other financing expenses

Government borrows funds from multilateral institutions such as the World Bank and private development banks such as the African Development Bank (ADB) for use by public entities in the agriculture sector. Apart from loans, government may have other liabilities such as accounts payable which attract interest payments. Interest is an expense that government will incur for the use of the principal outstanding by public agricultural institutions. The interest expenses are decreases of government liabilities. In Zambia, interest payments on agricultural loans are paid indirectly by the Treasury. The treasury manages all interest payments for government. Nevertheless, interest costs on loans to agriculture are expenses for the sector and should be included.

Subsidies, grants and social benefits

These expenses represent transfers to individuals for their personal benefit. Government receives nothing directly in return for making this payment. There is a distinction between subsidies and social benefits. Subsidies are a government expense to farmers and public agencies made, based on levels or value of production and to influence production or the prices of farm outputs (IMF, 2006). Subsidies are to private or public producers only. Farmers receive subsidies when they produce and sell an output in the domestic or external market or when they buy or import inputs. When government gives out food below market prices, this is a transfer of social benefits to consumers rather than a 'subsidy' payment. According to GFSM, subsidies also include transfers to public agencies to compensate for losses they incur when they charge prices lower than their average cost of production. In general, subsidy payments exist whether the recipient is a private or public producer or the producer is a financial or non financial enterprise.

Government grants form an expenditure classified first by the recipient and then by whether the grant is current or capital. The GFSM recognizes three recipients: Foreign governments, international organizations and general government units. Current grants cover current expenses while capital grants compel the recipient to buy assets.

Any transfer payments to consumers are categorized as social benefits. Social benefits are current transfers of cash or in-kind to protect parts of the population against social risks. Governments give out input packs to vulnerable but viable households to help them secure food supplies. Such transfers are in-kind social benefit expenditure but not subsidies.

Other expenses

These are residual expenses not covered by any of the previous appropriation or expense types. The scope of these expenses is specific enough to act as a constraint against non-authorized expenditure, but not to inappropriately constrain intended activities approved by the appropriation (Government of New Zealand, 2005).

Functional classification of public spending on agriculture

The ongoing AU exercise to track PAE is based on the Classification of Functions of Government (COFOG) developed by the Organization for Economic Cooperation and Development (OECD). The NHA and the System of Health Accounts also developed by OECD use a functional approach to define health spending (De et al., 2004). The COFOG has a three-level scheme. There are ten 'top-level two-digit' categories referred to as divisions, (Table 3). For example, Division 04 is for Economic Affairs and Health is Division 07. Within each division, there are several groups (3-digit categories). For example, under the economic affairs division, Group 042 take-in agriculture, forestry, fishing and hunting. Finally, within each

Table 3. Division of expenditures by government function.

S/N	Division of expenditure
1	General public services
2	Defense
3	Public order and safety
4	Economic affairs
5	Environmental protection
6	Housing and community amenities
7	Health
8	Recreation, culture, religion
9	Education
10	Social protection

Source: IMF (2006).

group there are classes or 4-digit categories. For example, agriculture is Class 0421 and forestry is Class 0422 (IMF, 2006).

The COFOG provides a detailed description of each class. Given this paper's focus on agriculture, reproduction of the details for Group '042' is done. Under agriculture (Class 0421) the functions of government include:

1. Administration of agricultural affairs and services; conservation, reclamation or expansion of arable land; agrarian reform and land settlement; supervision and regulation of the agricultural industry;
2. Construction or operation of flood control, irrigation and drainage systems including grants, loans or subsidies for such works;
3. Operation or support of programs or schemes to stabilize or improve farm prices and farm incomes; operation or support of extension services or veterinary services to farmers, pest control services, crop inspection services and crop grading services;
4. Production and dissemination of general information, technical documentation and statistics on agricultural affairs and services; and
5. Compensation, grants, loans or subsidies to farmers with agricultural activities including payments for restricting or encouraging output of a particular crop or for allowing land to remain uncultivated.

This description of public agricultural functions excludes multipurpose development projects in which agriculture features at a secondary level.

Under forestry (Class 0422), the functions are:

1. Administration of forestry affairs and services; conservation, extension and rationalized exploitation of forest reserves; supervision and regulation of forest operations and issuance of tree-felling licenses;
2. Operation or support of reforestation work, pest and

disease control, forest fire fighting and fire prevention services and extension services to forestry operators;
3. Production and dissemination of general information, technical documentation and statistics on forestry affairs and services; and
4. Grants, loans or subsidies to support commercial forest activities.

Fishing and hunting (Class 0423) covers fishing and hunting for both commercial and sports activities. The fishing and hunting affairs and services listed subsequently refer to activities that take place outside natural parks and reserves. The functions include:

1. Administration of fishing and hunting affairs and services; protection, propagation and rationalized exploitation of fish and wildlife stocks; supervision and regulation of freshwater fishing, coastal fishing, fish farming, wildlife hunting and issuance of fishing and hunting licenses;
2. Operation or support of fish hatcheries, extension services, stocking or culling activities, etc;
3. Production and dissemination of general information, technical documentation and statistics on fishing and hunting affairs and services; and
4. Grants, loans or subsidies to support commercial fishing and hunting activities, including the construction or operation of fish hatcheries.

Functions of controlling offshore and ocean fishing go to the police services (Class 031). Further, administration, operation or supports of natural park sand nature reserves are covered under environmental protection, Division 05.

NEPAD has also reproduced these details in the Annex of its report on tracking expenditure on agriculture (NEPAD, 2005). When compared with the original COFOG descriptions, NEPAD's list has modifications. Unlike the COFOG listing, the functions listed by NEPAD exclude hunting from fishing activities. This paper recommends the use of the original COFOG classification which includes hunting and fishing but keeping the expenditures disaggregated to allow grouping in various combinations. Furthermore, NEPAD's list has two additional functions each for agriculture, forestry and fishing. These functions are:

1. Administration and operation of government agencies engaged in applied research and experimental development related to agriculture and
2. Grants, loans or subsidies to support applied research and experimental development related to agriculture by research institutes and universities.

This guide recommends these additions as well. Agricultural research and development (R&D) constitutes an important public function. The COFOG system collapsed R&D for all economic sectors (Group 048).

DATA AND EXPENDITURE ACCOUNTS

The framework and the classification of PAEs had previous been described. The essence was to accurately capture the flow of public agricultural resources. This section explores how to assemble expenditure data to estimate elements of that framework.

Data plan

A profile of a public agricultural subsystem is the foundation of a good data plan. A good understanding of the actors (source of funds, spending agents, service providers and users of services) helps identify the most likely sources of information. A data plan should point out which data sources to contact for what type of data.

Part of data-gathering may initially involve an outreach and sensitization campaign to raise awareness about agricultural accounts and enlist voluntary participation and cooperation from relevant institutions. A workshop can be organized for public service officers' to discuss the need to (a) develop agriculture accounts (b) share accurate data and (c) highlight potential problems in managing data systems.

As a rule, setting up and preserving a good working relationship with relevant agencies is an early priority. Co-opting agency staff on this exercise will ensure access to copies of documents and electronic records that are available and develop capacity for continuity.

Resolving incentive issues for public service staff who will actively participate is important. For transparency and accountability, cooperation should be at institutional level rather than with individuals. A data plan should reflect the resources available, staff experience and the time frame for completing the task. If resources are available and time allows, data can be collected at various levels and triangulated to produce robust estimates.

Sources of data for public expenditure on agriculture

Data on PAE are available from government budgetary records. Government data on expenditure are complex and the analysts will face common challenges of either double counting or undercounting. While data on government expenditure are 'on-shelf' and appear in public documents such as the 'Yellow Book,' detailed government budgetary records exist in the Treasury and public auditing agencies. Since the Treasury is a major source of agricultural resources channeled to spending agents, accessing records at the Treasury is more efficient than getting records from each spending agent. The Treasury produces up-to-date monthly and yearly releases of funds to spending agents. Further, details on program and project activities are also available at the Treasury office. Records from the Treasury can, therefore, be a primary source of data.

Collecting data from the line ministries, service providers (departments) and service users (farmers) is important in assessing the quality and consistency of data at each stage. While it is important to have the preliminary expenditures from the Treasury, the assembly of data from other levels should also be done. This is necessary to track how spending agents use funds released by the Treasury. The use for which funds are applied often change at the time funds are released due to various reasons.

Type of data

Data on public expenditure need to capture information on where spending agents get their money from and who they give the money or provide the service to. The data should also capture information on the goods or services for which expenditures were incurred. Some donors can be the source of finance, the spending agent and service provider.

Actual versus approved appropriations

When working with government expenditure records, analysts should clearly distinguish between approved spending, released spending and audited spending. Table 4 illustrates the expenditure plans of the Ministry of Agriculture and Cooperatives and funds released by the Ministry of Finance and National Planning. Funds released by government often fail to match approved appropriations. This means that certain planned programs do not get funded. Occasionally, releases exceed original appropriations but this is done through supplementary budget appropriations. Relying only on approved expenditures when capturing data is, therefore, inadequate.

When funds are released by the Treasury, spending agents reallocate funds due to unforeseen circumstances. Funds to finance unforeseen expenditures are deducted from other planned activities. In the long run, audited accounts of actual spending are the most reliable and preferred measure of expenditure unlike approved and released spending. While recognizing that variation between appropriations and audited accounts exists, efforts are needed to explore the source and magnitude of the variation.

The down side of relying on audited accounts is that it takes two or more years to have audited accounts. The length of this delay depends on the capacity of the Auditor General's office. An adequately staffed and funded auditing agency should be able to issue audited accounts after one year of actual spending. In the case of Zambia, audited accounts are made available two years after funds are released. The most practical approach is for the analyst to use audited accounts were possible and

Table 4. Variation in amounts requested by the Ministry of Agriculture and Cooperatives and amounts approved and released by the Ministry of Finance and National Planning, 1992 to1999, Zambia (2006 prices).

Year	Requested	Approved	Approved (%)	Released	Released (%)
1992	257,516	76,751	30	67,178	88
1993	193,700	134,060	69	95,301	71
1994	483,317	441,358	91	168,398	38
1995	207,416	132,388	64	143,183	108
1996	230,633	192,058	83	129,088	67
1997	349,519	296,530	85	164,793	56
1998	246,803	175,183	71	128,155	73
1999	224,859	143,752	64	119,991	83

Sources: Republic of Zambia (1997, 2002).

approved expenditures for the current or most recent years.

Budget tracking does not end with use of audited accounts. Budget tracking surveys can be conducted to verify whether beneficiaries actually received the service as claimed in audited expenditures. Surveys conducted in Uganda to track public spending in health and education revealed gaps between released resources and the services rendered (Ablo and Reinikka, undated). Budget tracking surveys help in assessing the outcomes of such expenditures.

Federal and sub-national government spending

Countries operating a federal government system run budgets at several levels. Public investments on agriculture that generate spillover effects across state boundaries, for example, irrigation, are good candidates for federal funding. Generally, in countries that have decentralized systems of governance, effort is needed to collect data at all levels including state, province, district and municipality.

Data-gathering from sub national authorities can be daunting. Sub national government expenditures may not be consolidated like those of the central government. Data should be available for each state, district council or municipality. The large numbers of states or councils may also make it difficult to collect data from all of them. The alternative for the analyst is to carry out a sample survey of expenditure at lower administrative levels. The use of different classifications across sub national governments will also make it difficult to aggregate the spending.

Donor spending

As previously discussed, donor funds are part of public spending. Cooperating partners have a choice to either channel their development support through the government budget or to run their development programs independent of government programs. Multilateral donors such as the World Bank, IMF and ADB/ADF and bilateral development agencies give program loans, and grants to governments. Analysts should avoid mixing funds with different time horizons or spans. Some projects run for five and others for only two years. The annual accounts should reflect the annual spending only and not the total funds for the duration of the project.

Comprehensiveness of data assembly

Government budgets have numerous details. Disaggregated data should be collected to enable analysts to aggregate them into various forms or elements of spending. When conducting a spatial expenditure analysis, a total spending figure is not so useful. Rather, the spatial distribution of such spending matters as it points to the locations that receive services.

There are instances where analysts will face resistance from protected ministries or agencies whose figures on expenditure are sensitive or classified. These entities receive a single appropriation for all their expenses and agriculture-related expenses may not be so apparent. Efforts are needed to extract such data but comprehensiveness should not jeopardize other interests.

Composition of the tracking team

While the outcome of tracking expenditure is of immediate importance, the process of carrying out the assessment equally matters. Following the experience of the World Bank in conducting reviews on public expenditure, there are three types of approaches to setup a working team: Wholly in-house; externally led, participatory; and joint- or client-led (Bevan, 2003). Internal (in-house) expenditure assessments by staff are conducted to either build internal consensus or checking implementation of development plans. The externally led but participatory approach entails consulting and involving sector stakeholders apart from funders,

Table 5. Identifying and mapping the P A E profile (funding sources, spending agents and service providers) in Zambia.

Spending agent	Primary funding source			Examples of service provider
	Treasury	Donor	International loan	
Agriculture	X		X	Research institutions
Environment and tourism	X		X	Forestry research and extension
Education	X			Faculty of agriculture
Community development	X			Agricultural welfare agencies
Finance and planning	X	X		Agricultural development projects
Works and supply	X			Roads and building departments
Water and energy	X		X	Water and power utilities
Lands	X			Land survey department
Office of vice president	X	X		Disaster management unit

Source: Adapted from Salem (2004).

spending agents and service providers. The third approach entails having members from both development partners and government counterparts in the assessment team. This third approach builds capacity for institutionalizing expenditure tracking.

A steering committee of high-level representatives from relevant organizations is essential early in the exercise. Assembling accounts on expenditure requires support from different institutions. Having representatives of these institutions on the committee will ensure cooperation in producing data and confirmation of estimates. Besides, a committee will be the conduit for communicating findings to stakeholders.

ILLUSTRATIONS OF PUBLIC AGRICULTURAL EXPENDITURE PROFILE, EXPENDITURE USES AND FUNCTIONS USING DATA FROM ZAMBIA

Table 5 shows the profile of a public agricultural subsystem in Zambia. This profile provides a depiction of the principal financing sources; Ministries, Provinces and other Spending Agents (MPSAs); and the types of departments providing services to the sector. The list of spending agents may differ from one country to another. The funding sources include general tax revenue collected by state or local authority, co-payments by beneficiaries of services, donor budget support and loans from international banks. If local authorities have significant own resources (from taxation, borrowing and not state transfers) and they are responsible for a significant share of total spending on agriculture in eligible fields, the local government is an eligible source of funding.

In the Zambia profile of public agricultural expenditure flows, several ministries are included as spending agents. These ministries are in two groups. Group 1 is for 'Take-All' ministries and agencies which perform purely agricultural functions, while Group 2 is for 'Partial-Budget' ministries whose mandates are not purely agricultural,

but they perform agricultural activities indirectly as they implement their mandated functions. In Zambia, the Ministry of Agriculture and Cooperatives and the Ministry of Livestock are in the 'Take-All' group 1. Other ministries including Finance and National Planning, Energy and Water Development, Works and Supply, Community Development and Social Services, Lands, Environment, Tourism and Natural Resources and Defense are in the 'Partial-Budget' group 2. When tracking expenses, special attention should be given to the 'Partial-Budget' group to separate agricultural expenditure from non-agricultural expenditure. Table 5 also shows the departments using the funds to deliver agricultural services.

Expenditures by the Ministry of Agriculture and Cooperatives in Zambia pay for personnel emoluments, research, extension, training and other services, such as controlling diseases of national economic importance. Agricultural expenditures by other ministries pay for agricultural welfare services and infrastructural developments such as electrification, construction of roads, dams, and land development in farm blocks. The PAE profile provides not only the relationship between financing and service delivery roles but also direction to sources of information, to data repositories, and to the main actors in the agricultural profile. As analysts undertake their work, they should keep an open mind about the number, relative position, and activities of the actors in the public agricultural system.

Table 6 shows examples of expenditures which are agriculture-related and those unlikely to be agriculture-related irrespective of which agency pay for the expenditures. In the first example shown in Table 6, Ministry of Lands, a partial-budget spending agent has two different expenditures incurred by its survey department. Spending on demarcating land for farming is an agricultural-related expenditure and should be included in PAE. But spending on demarcating land for industrial activities is ineligible as a PAE and should be excluded.

Not all spending by Take-All spending agents, such as,

Table 6. Illustrations from Zambia of expenditures to include or exclude from PAE.

Agency paying for activity	Likely to be agriculture-related	Unlikely to be agriculture-related
Ministry of lands-surveying of properties	Survey and demarcation of land for farm block development	Survey and demarcation of land for commercial, industrial and other purposes
Agriculture department-commemorations	World food day	International women's day
Office of the president-women enterprise development	Procurement of cattle and goats for women in Chibombo	Procurement of hammer mills for women in Chibombo

Source: Republic of Zambia, (2007).

Table 7. Illustration of economic classification of PAE in the Ministry of Agriculture and Cooperatives, Zambia, 2006.

Category	2006 (billion Kwacha)
Personnel emoluments	84
RDCs	39
Grants and other payments	12
Poverty reduction programs/highly indebted poor country[a]	270
Capital spending	1
Total allocation to the ministry of agriculture and cooperatives	406

[a]These programs also include the Fertilizer Support Program and Food Reserve Agency.
Source: Govereh et al. (2006).

the ministry of Agriculture and Cooperatives is agriculture related. The second example in Table 6 shows that spending by MACO on Women Day celebrations is not agricultural related and should not be counted as part of PAE. However, spending by MACO for World Food Day celebrations is eligible to be counted as PAE. Extreme caution is required when making decisions and all these decision rules need to be well documented.

Table 7 shows the economic classification of PAE in the Ministry of Agriculture and Cooperatives in Zambia. A noticeable exclusion is interest expenses. Even though the treasury repays loans borrowed by all sectors, the agricultural component should be counted with the rest of PAE. Several agencies including Food Reserve Agency under MACO borrows from commercial banks to finance its operations. Interest costs should be counted. Subsidies and social benefit expenses appear under the Poverty Reduction Programs (PRPs). The classification of expenses under this line disguises the real use of resources.

Consumption of fixed capital is not being measured. This raises issues of how reinvestment of capital assets, such as buildings, equipment and land improvements is managed. It is no surprise then that numerous public capital assets in agriculture are in a state of disrepair. Capital expenditures shown in Table 7 cover procurement of additional physical assets but fail to count the consumption of existing physical assets due to physical deterioration, normal obsolescence or normal accidental damage.

Other payments are for membership fees in international organizations, for example, International Seed Testing Association and spending for provincial and district programs.

In Zambia, estimates of expenditure are for 'Heads' which can be a ministry, public commission and special offices including those of the President, the Auditor General and the Cabinet. These main 'Head' categories are from 1 to 99. 'Head 1' is the Office of the President–State House. Ministry of Agriculture and Cooperatives is 'Head 89.' There are subcategories under each 'Head.' These subcategories represent departments or institutes. Number "01" to "n" represent the departments. Table 6 gives an illustration. Spending of the Government of the Republic of Zambia (GRZ) for the agriculture sector is through several departments belonging to several ministries. In the Ministry of Agriculture and Cooperatives, the departments are the subcategories (01 ton) listed in Table 6. The functional composition of the budget of the Ministry of Agriculture and Cooperatives (MACO) reveals the types and amount of services the ministry gives.

Table 8 gives the departmental structure of the Ministry of Agriculture in Zambia. Each department is a cost center. Listing these departments does not match the COFOG listing of agricultural functions performed by government. For example, subcategories 07 and 12 (agricultural training and agricultural information service) will contribute to the function of producing and disseminating of general information. The AU/FAO team

is collecting data on expenditure by broad classes of agriculture, forestry and fisheries. Further, the data are in two types of economic uses, namely RDCs and capital spending. This guide recommends collection of disaggregated data by all agricultural functions as well as by all economic uses.

Reviewing the functional compositions can help show the basis of the allocations. The review can show links and the degree of alignment with regional policy agendas such as NEPAD's CAADP or the vision, mission and priorities of the Fifth National Development Plan (FNDP) or Medium-Term Expenditure Framework (MTEF) ceilings or the ministry's strategic plan/budget proposals.

Conclusion

Countries in the region have a challenge to determine accurately and finance appropriately the agriculture sector to achieve the CAADP target growth of 6 percent per annum. This places significant demands on having comprehensive information about national public spending on agriculture. Accounts of expenditure on agriculture are, therefore, an important tool for analysis of public expenditure. The paper intended to expose practitioners to principles of developing public accounts on agriculture. These accounts not only reveal flows of resources but also analyze their importance in supporting agricultural development goals. Zambia is one of the signatories to the Maputo Declaration. Without conducting a comprehensive expenditure tracking exercise, she cannot tell how close she is to attaining the expenditure target.

Tracking of flows should be done using expenditure classes that describe the dimensions of the public agricultural system. Expenditure accounts on agriculture allow the decision maker to view resource flows from funding sources to entities that provide and receive agricultural services.

The profile of public agricultural system is an important tool for tracking PAE. Before embarking on any efforts to collect data, a profile of the agricultural system should be developed. Further, classifications of expenditures on agriculture enable grouping of different expenditures into policy-relevant dimensions. This paper has presented tools that will enable practitioners to orderly navigate their way through the complex maze of public expenses.

The key steps to follow when assessing public expenditure on agriculture in a given country should include:

1. Formation of a steering committee with agricultural stakeholders;
2. Formation of a technical team with subject matter and accounting or auditing specialists;
3. Description of the agriculture sector and identification of its structure and all relevant public entities;
4. Organization of a workshop to sensitize and elicit

cooperation from identified actors of the public agricultural system;
5. Development of matrices identifying the relationship between original funding sources, spending agents, service providers and beneficiaries;
6. Setting up an inventory of existing primary and secondary expenditure data;
7. Defining and carrying out the data-collection process for each entity;
8. Certifying, entering and analyzing expenditure data;
9. Presentation of preliminary results during a second workshop to stakeholders to solicit feedback to develop final recommendations.

As shown in the illustrations from Zambia, tracking is as much an art as it is a science. There are accounting principles to observe and subjective judgments to make when applying these principles.

Abbreviations: ADB, African Development Bank; **AU**, African Union; **CAADP,** Comprehensive Africa Agricultural Development Program; **CGIAR**, Consultative Group on International Agricultural Research; **COFOG,** Classification of Functions of Government; **DFID,** Department for International Development; **EU,** European Union; **FAO,** Food and Agricultural Organization of the United Nations; **FNDP,** Fifth National Development Plan; **GFSM,** Government Financial Statistics Manual; **IFPRI,** International Food and Policy Research Institute; **IMF,** International Monetary Fund, **MACO,** Ministry of Agriculture and Cooperatives; **MPSA,** Ministries Provinces and other Spending Agents; **MTEF,** Medium-Term Expenditure Framework; **NEPAD,** New Partnership for Africa's Development; **NHA,** National Health Accounts; **OECD,** Organization for Economic Cooperation and Development; **PAE,** Public Agricultural Expenditure; **PE,** personnel emoluments; **PRP,** Poverty Reduction Programs; **RDC,** recurrent departmental charges; WHO, World Health Organization.

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