



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

Monitoring of Public Spending in Agriculture in Southern Africa

¹Pius Chilonda, ²Femi Olubode-Awosola, ³Isaac Minde, ⁴Daniel Njiwa and
⁵Jones Govereh

Correspondence: femi.olubode-awosola@agresearch.co.nz

Contributed Paper prepared for presentation at the International Association of Agricultural Economists Conference, Beijing, China, August 16-22, 2009

Copyright 2009 by Chilonda, Olubode-Awosola, Minde, Njiwa and Govereh. All rights reserved. Readers may make verbatim copies of this document for non-commercial purposes by any means, provided that this copyright notice appears on all such copies.

¹*International Water Management Institute (IWMI), Pretoria, South Africa*

²*AgResearch Ltd, Palmerston North 4442, New Zealand,*

³*Intrnational Crops Research Institute for the Semi-Arid Tropics*

⁴*Common Market for eastern and Southern Africa (COMESA), Lusaka, Zambia*

⁵*Food Security Research Project of Michigan State University, Lusaka, Zambia*

Abstract

Public resources are limited and have competing demands, hence prioritization will be critical. Policymakers want to know what public spending on agriculture sector will have the largest impact on the poor and how the resources should be allocated among the different sub-sectors. This brief examines the SADC region's progress toward meeting the commitments made by African Heads of State and Government in the 2003 Maputo Declaration on Agriculture and Food Security to allocate at least 10 percent of national budgetary resources to agricultural sectors. Further, to build understanding of the challenges and opportunities facing governments as they strive to meet this target, the results of case studies of public expenditures on agriculture in Malawi and Zambia are summarized. Implications for policy and research are drawn. A case for increased public spending on agriculture is presented first, followed by a region-wide perspective and a focus on Malawi and Zambia.

Agriculture and poverty reduction: Case for increased public spending in agriculture

In agriculture-based economies, like most southern African countries, agriculture is the most effective way to reduce poverty because, rural poverty is higher, agricultural production & agricultural related activities are the major sources of income for rural poor and food expenditure consumes larger portion of meager rural incomes (Bresciani & Valdes, 2007). In developing countries, growth in non-agricultural sectors matters most in poverty alleviation in absolute terms, (Bravo-Ortega and Lederman, 2005). Generally, agricultural growth reduces poverty across all country types and economic growth originating from agriculture is at least twice as effective in reducing poverty as economic growth originating from other sectors of the economy (World Bank 2008). The challenge remains defining budget priorities to support agricultural productivity in poverty reduction.

For decades, development experts have debated the sources of growth in an economy. While Domar (1957) and others argued that increasing spending in plant, machinery and other inputs that bring increased productive power is the source of growth, some like Solow (1970) have argued that technical progress through better and more advanced methods of production is the source of growth. However, to stand in between the two schools of thought is to accept that, in the absence of technical progress, investment is not enough for sustained per capita income growth (Easterly, 2001). Economic analysis finds strong and consistent evidence that investment in agricultural research has yielded high returns. The returns range from benefits to the farm sector, food industry, and consumers in the form of more abundant commodities at lower prices (Fuglie and Heisey, 2007).

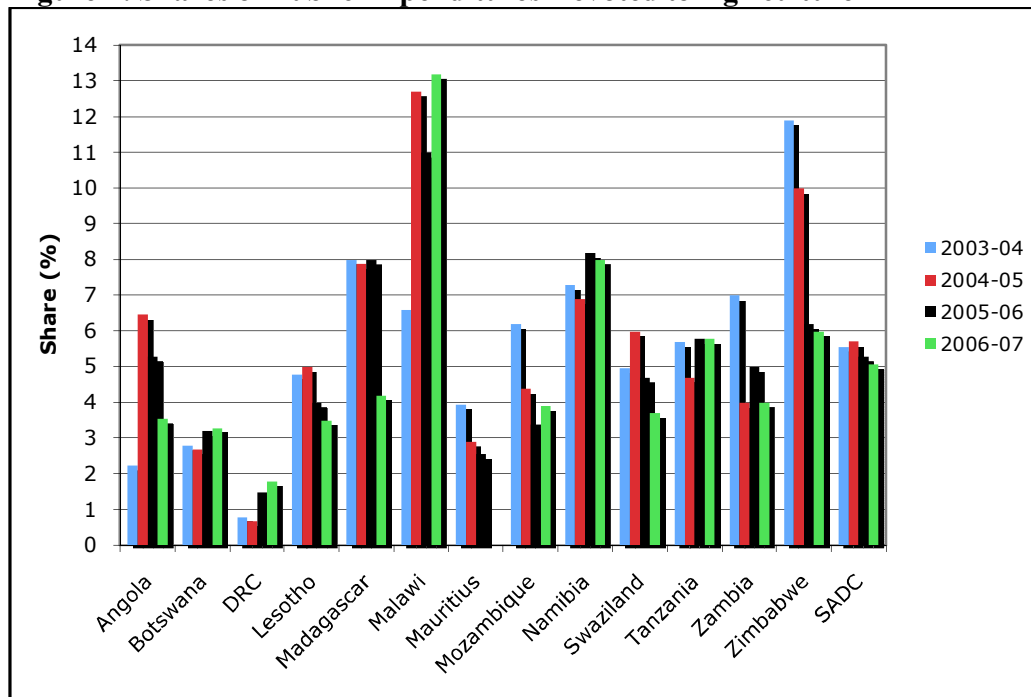
Trends analysis of recent data on public spending in agriculture are presented in the next section to show the extent of changes in spending especially after the base year 2003 when Maputo Declaration was endorsed.

Which countries are on track to meet the CAADP 10% target in the SADC region?

Most countries in the region have yet to achieve the Maputo target of allocating at least 10 percent of national budgetary resources to agricultural sectors this target (Figure 1). The average for the region in 2007 was 5.4%. Malawi is the best performer and only Southern African country consistently meeting the target after Maputo Declaration. Followed are Angola, Madagascar, Namibia, Tanzania, Zambia and Zimbabwe having spent on average above 5 but less 10% of national budget on agriculture between 2004-05 and 2006-07. However, the trends are consistently declining in Angola, Madagascar and Zimbabwe since 2004-05. Hence, there is an upward trend in the number of countries reporting less than 5% of national budget's allocated to agriculture from 2004-5 to 2006-07 and those reporting 5% and above are declining since 2003-4. Divergences from the Maputo target vary widely across the region (Figure 2). For SADC as a whole, agriculture's share must increase by almost 5 percent, with eight countries needing larger increases. DR Congo, Botswana, Zambia, and Mauritius face the greatest gaps. Save for Malawi, countries in which agriculture is most important in the economy tend to have relatively large gaps—e.g., DR Congo, Mozambique, and Tanzania.

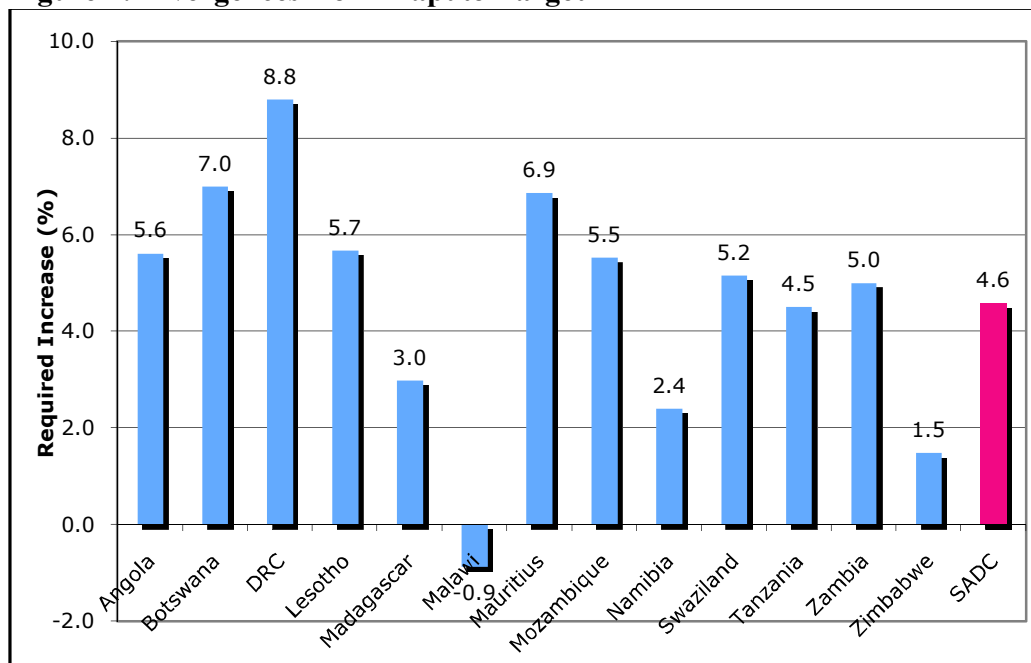
One implication from these trends is that it seems only Malawi's has responded to the Maputo Declaration spending average annual 12.3% between 2004-05 and 2006-07. Another implication is that while the countries may not all need to reach the 10% for ultimate reaching the target of halving poverty and hunger by 2015, the fact that the trends in proportion of agriculture expenditure to total expenditure are not improving especially after the Maputo Declaration is alarming as one expects consistent commitment to the rural and agricultural populations. The 2007 population estimates show that the region has a total population of about 256 million with well diverse population sizes. There is the relatively largest population group comprising DRC, South Africa and Tanzania in that order. Followed is a group of 5 larger countries having population range from about 12 million in Zambia to about 20 million in Mozambique. The last group comprises a range of far relatively low population countries namely about 1.1 million in Swaziland to about 1.8 million each in Botswana and Lesotho. Of these populations, most live in rural areas; the least being about 40% in South Africa. The rural population is highest in Malawi at 82%. This adds up to mean that about 63% of the region lives in rural areas. Almost same distribution is observed for agricultural population in 2006 with 9 countries having more than half of the population being agricultural population. The least being about 10% in Mauritius and a group of highest in Malawi, Lesotho, Swaziland, Tanzania, Angola; each is having a more than 75% of agricultural population. On average, the region has about 57% agricultural population (Chilonda, Olubode-Awosola and Minde, 2008).

Figure 1: Shares of Public Expenditures Devoted to Agriculture



Data source: Source: SADC (2008), UNECA (2007)

Figure 2: Divergences from Maputo Target



Source: Authors' computations

Note: Data for South Africa are currently not available.

The country case studies

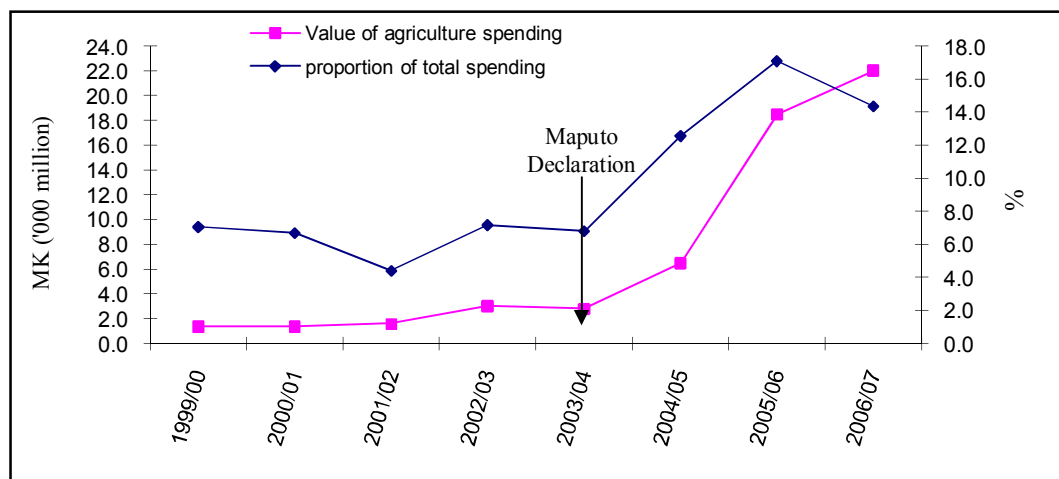
As is not enough to increase public spending on agriculture but the “when”, “where”, and “how” of the spending are very critical, this brief presents qualitative analysis of case studies of Malawi and Zambia. Public spending classification by function and programmes – subsidies, loans, etc, and administrative classification - government and donor are performed to show spending pattern. This is to reveal the extent to which plan and policy objectives are directly linked to the budget, and whether policy priorities are appropriately funded. In addition, spending incidence analysis by means of mapping is also performed to show whether spending is allocated to exploit agricultural potentials. This is based on the principle that spending should be progressive such that high producing agricultural zones or high yielding sub-sectors receive a proportionately higher share of spending.

Malawi’s apparent success in achieving the Maputo target for expenditures on agriculture presents a unique opportunity to build understanding about the challenges and opportunities facing other SADC countries as they strive toward this target¹. Clearly, conditions vary greatly across countries. But several aspects of the dynamics and internal composition of agriculture’s share of Malawi and Zambia’s public spending would appear to have broader relevance and in comparison with others.

The Case of Malawi

The value and proportion of public spending on agricultural sector have risen almost eight-fold and two-fold respectively since 2003. The rise appears to be correlated with the Maputo Declaration (Figure 3). The composition of spending by sub-sectors has also changed. Livestock and crops have come to consume almost the entire budget, at the expense of forestry and fisheries (Figure 4).

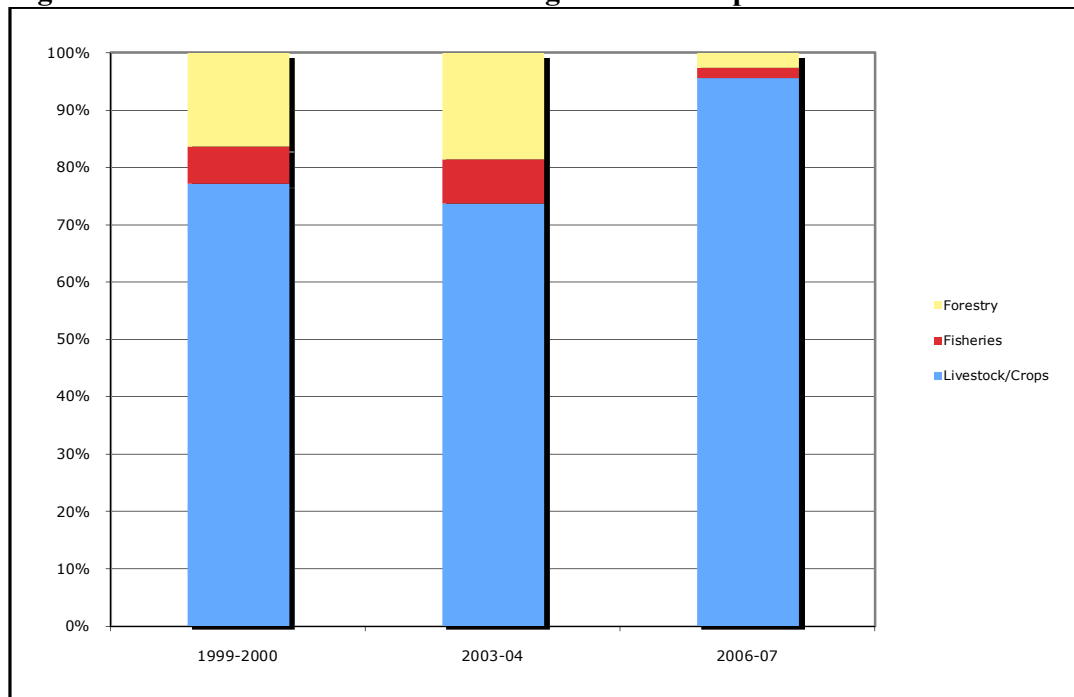
Figure 3: Public spending on Agriculture in Malawi



Data source: Government of Malawi (1999-2007)

¹ A bulk of the data and analysis on the agricultural expenditures in Malawi has been taken from the recent work of Njiwa et al. (2008). Please refer to this paper for more details.

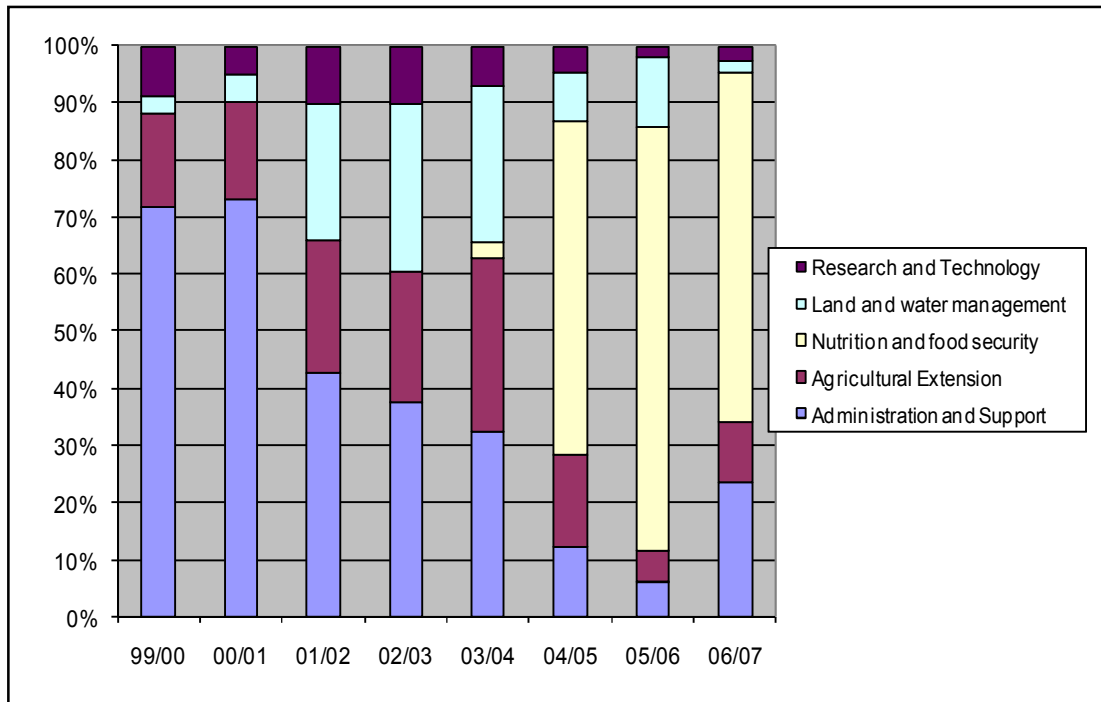
Figure 4: Sub-Sectoral Distribution of Agricultural Expenditures in Malawi



Source: Government of Malawi (1999-2007)

Frequent changes in the allocation of major projects and initiatives across programs complicate a program-based analysis of the agriculture budget. Especially problematic is the “Administration and Support” category, which grew ten-fold between 2004/05 and 2006/07 (Figure 5). Major “development” expenditures are included in this category—e.g., those related to irrigation and other fixed capital. Also included in the category, under a large safety net-oriented “Nutrition and Food Security Program,” are major subsidy initiatives such as the Targeted Input Program and Starter Pack Program, and support to parastatal agencies such as the Agricultural Development and Marketing Corporation (ADMARC) and the National Food Reserve Agency.

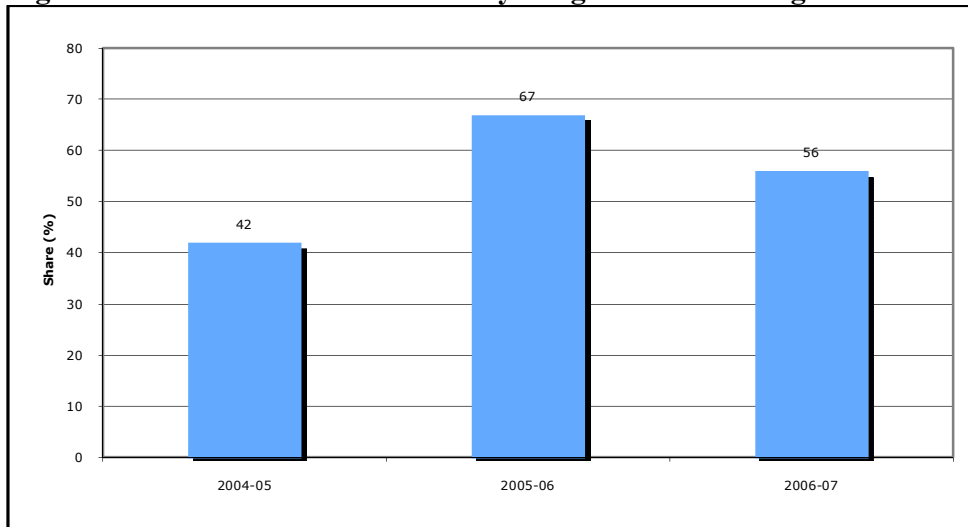
Figure 5: Distribution of spending across program areas in crop and livestock subsectors in Malawi



Source: Government of Malawi (1999-2007)

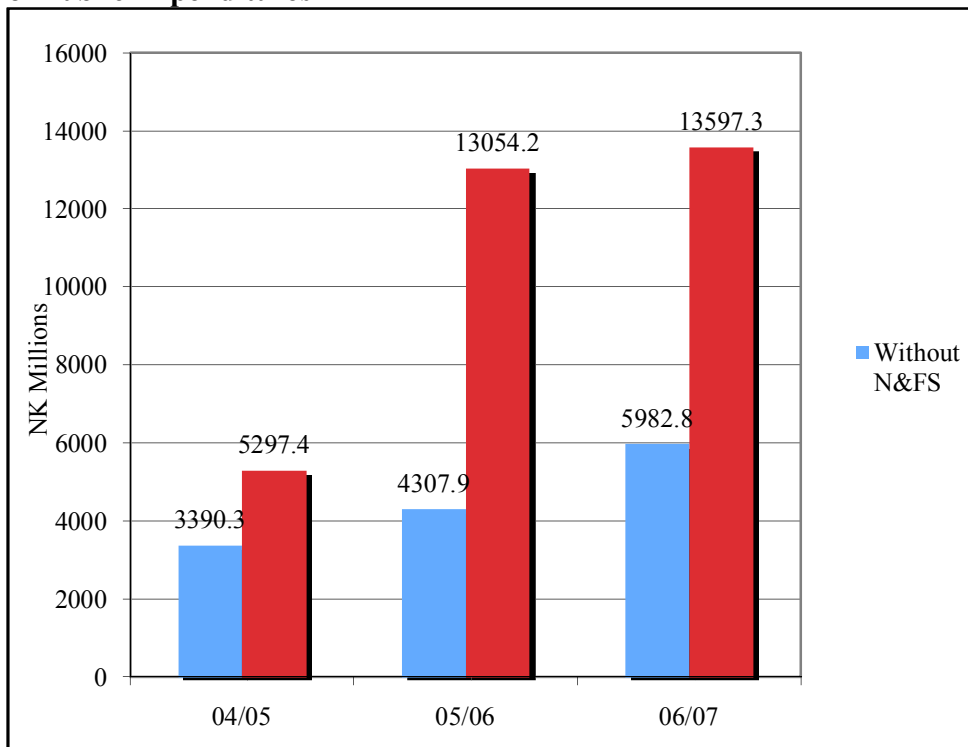
This Nutrition and Food Security Program was first carved out as a distinct budget item in the 2004/05 fiscal year, when it accounted for 42 percent of the agriculture budget. That share rose to 67 percent in 2005/06, and stood at 56 percent in 2006/07 (Figure 6). Without this program, between 2004 and 2007 agriculture’s share of Malawi’s budget would have ranged between 3.6 and 8.1 percent, rather than between 11 and 13.2 percent (Figure 7). Clearly, some initiatives in the Nutrition and Food Security Program are productivity and growth enhancing—e.g., the Targeted Input Program and Starter Pack Program. But others would appear to be less so—e.g., support to the National Food Reserve Agency.

Figure 6: Nutrition and Food Security Program Share of Agriculture Budget



Source: Government of Malawi (1999-2007)

Figure 7: Impacts of Nutrition and Food Security Programs on Agriculture’s Share of Public Expenditures



Source: Government of Malawi (1999-2007)

Note: N&FS = Nutrition and Food Security

The “recurrent” segment of the budget supports normal operating costs, along with those associated with agricultural subsidy initiatives, ADMARC, and the National Food Reserve Agency. The “development” component of the budget supports investment in

long term assets such as irrigation infrastructure. The recurrent share of Malawi's agriculture budget stood at almost 70 percent in 2007, compared to 50 percent in 1999; the 2007 development share was therefore well below its 1999 level, but it grew steadily between 2005 and 2007 (Figure 8).

While the Malawi government assumed responsibility for almost three-quarters of the agriculture budget between 1999 and 2007, its development partners covered almost 90 percent of the crucial development component (Figure 9). This has often been referred to as a 'crowding out' effect – with very important implications for tracking the progress towards the CAADP 10% target. Further research areas would include measuring how much commitments is actually going into agriculture to determine whether each government should be putting aside 10% if donors are already pouring much or rather putting government resources elsewhere as these will raise some more important policy implications.

The advantage of GIS was taken to explore integration of data on public spending on agriculture, poverty, population, agricultural production and other relevant data sets. In the case of Malawi, the district is the spatial level at which agricultural expenditure is recorded for each financial year. However, the most commonly used spatial level for agricultural planning is the agricultural development division (ADD) and is prudent to also use this level to aggregate annual public spending in agriculture. There are 8 ADDs, designated regions with similar agro-ecological characteristics in Malawi. According to the MoAFS 2008, Maize, pulses, cassava and sweet potatoes are produced in all the eight ADDs but cotton and rice are largely produced in Karonga, Machinga, Salima and Shire valley while tobacco is largely grown in Mzuzu, Lilongwe and Kasungu.

The results of this analysis do not include expenditures from the development budget of the sector and expenditures from fisheries and forestry departments. The failure to include development expenditures in this analysis was dictated by the fact that development projects are implemented by a single centrally coordinated PIU which does not usually capture expenditure data by geographical areas but project components. As for fisheries and forestry departments, the cost centre categorization is different from that of the MoAFS department (which follows the political/administrative boundaries) such that their inclusion would have complicated the picture.

The results roughly indicate that total district/research station recurrent expenditures for years 1999/00, 2003/04 and 2006/07 constitute about 63%, 53% and 12% respectively of total agriculture recurrent expenditures. Karonga, Mzuzu and Machinga ADDs received a proportionate increase in the share of the district allocations i.e. changing from quartile 1 to 2 or 3. Lilongwe and Blantyre ADDs both with the highest number of farm families have the lion's share of the total district allocations in almost all the years, while Shire valley and Salima ADDs had the least share (i.e. quartile 1) of the expenditure. Kasungu ADD on the other hand experienced a declining share of expenditure, shifting from quartile 3 in 1999/00 and 2003/04 to quartile 2 in 2006/07.

After the Maputo declaration, the Malawi government reacted positively by increasing the expenditure in agriculture (not only on aggregate level) for the ADDs. The expenditure growth rate rose from a minimum of 17% and maximum of 37% for period before the declaration to a minimum of 21% and maximum growth rate of 53% over the period after the declaration. Shire valley as an area falling in the lower quartile by proportion of expenditure in a particular year while, overtime, the area has benefited from huge expenditure growth rates i.e. of a maximum of 52.8%. Mzuzu and Karonga show a positive trend in terms of proportion of expenditure in particular time periods, their growth rates overtime have dwindled where compared in periods before and after the Maputo declaration.

Map 1: Pre and Post Maputo Declaration Agriculture Recurrent Expenditure

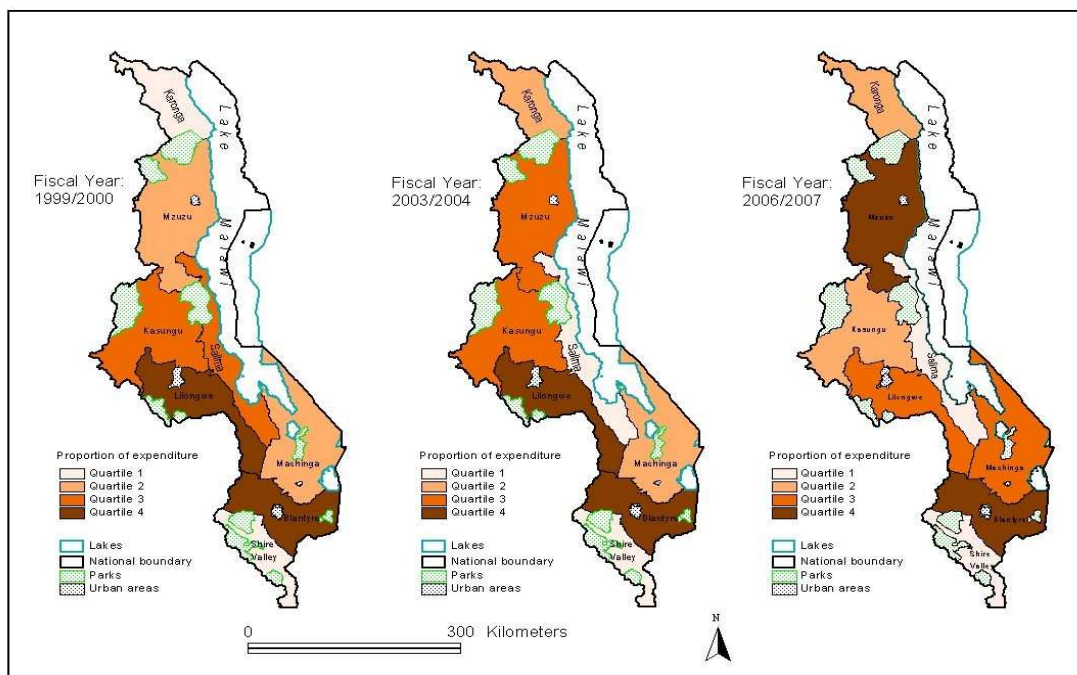


Figure 2: Spatial Agriculture Recurrent Expenditure Growth

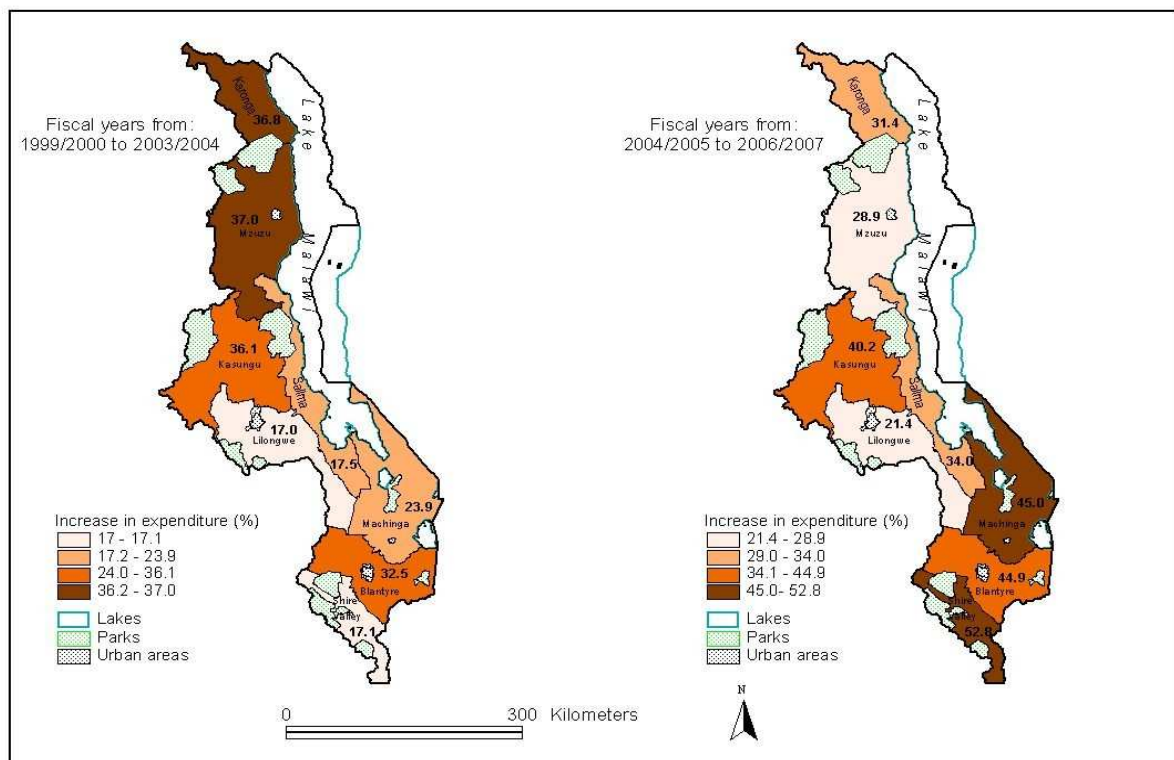
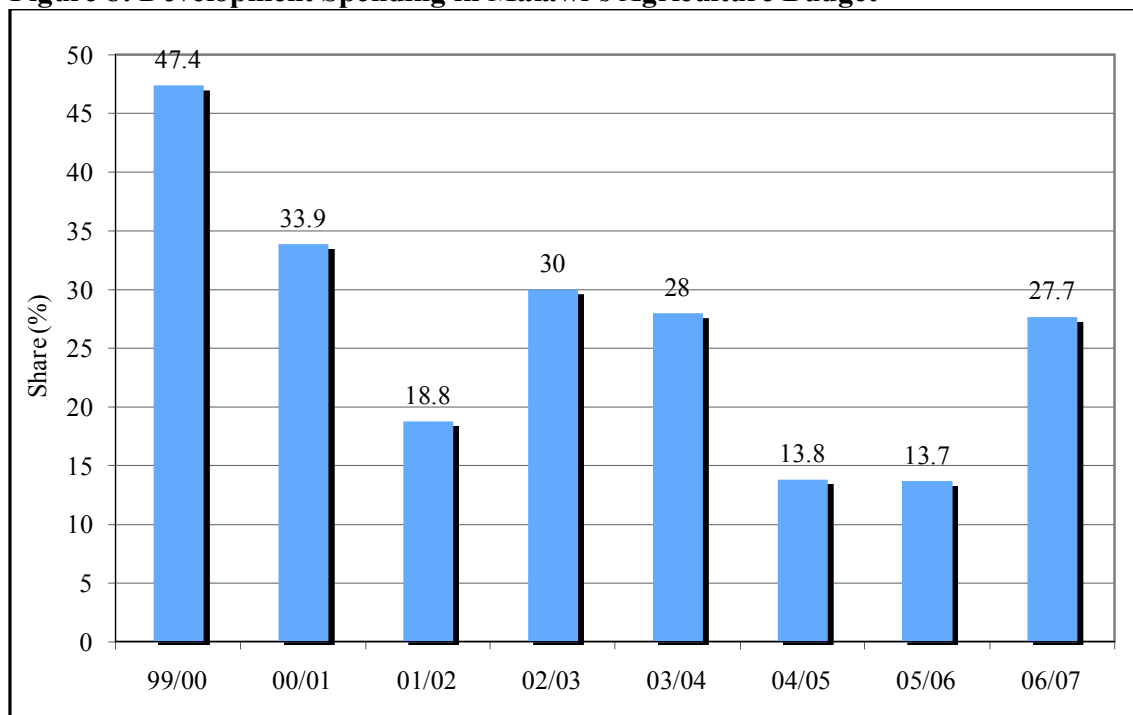


Figure 8: Development Spending in Malawi's Agriculture Budget



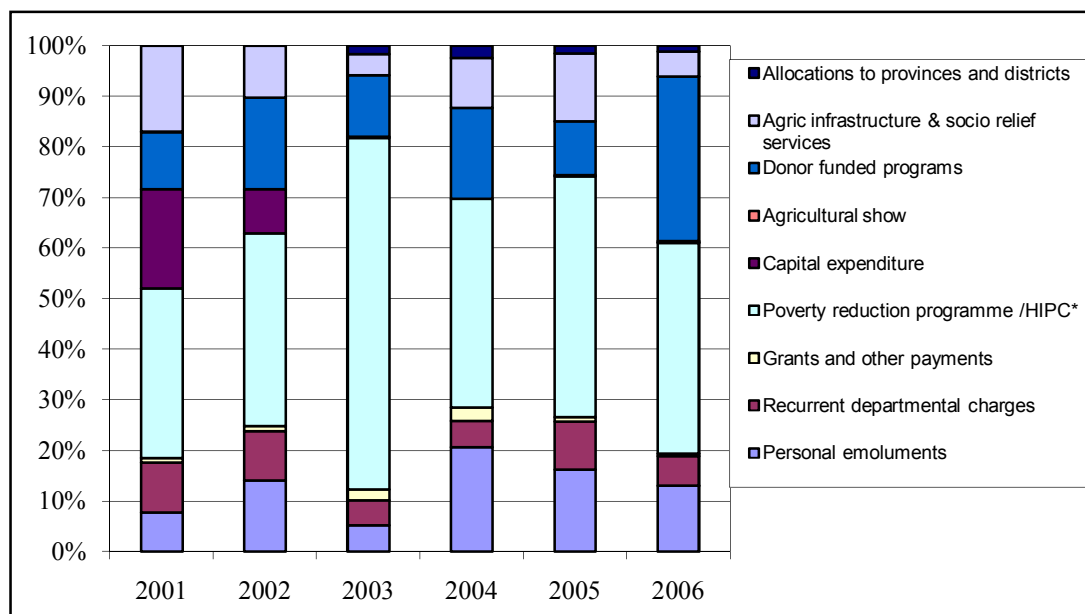
Source: Government of Malawi (1999-2007)

The case for Zambia

From the bigger studies², it would seem that whilst economic growth has taken place since the beginning of this decade in Zambia, the country is yet to have the desired impact on hunger and malnutrition in Zambia. Poverty has decreased substantially since 2000 in rural non-farm households as compared to rural farm households. Whilst Zambia is a major food producer in the region, production is not growing at a rate that can sustain the growth in population, or address hunger and poverty. Zambia is one of the countries in the region whose proportional spending on has been declining rather than increasing in response to the Maputo Declaration of 10% annual budget investment on agriculture.

However, expenditure classifications by government functions and programmes and/ or projects for spending between 2001 and 2006 at the national level show that of the total 2,354 billion Zambian Kwacha spent on agriculture during this period, the poverty reduction programme was given the highest priority, receiving almost half of the total expenditure. The expenditure on this function is highest for each year over the period. Donor funded programmes were also substantial but not consistent as they decreased in 2005. Allocation to capital expenditure was not only low, but declined from 2001, with zero capital investment in 2004 and 2006. Agricultural infrastructure and social relief services fluctuated, but was relatively high.

Figure 10: Distribution of spending in agriculture by functions and programmes in Zambia

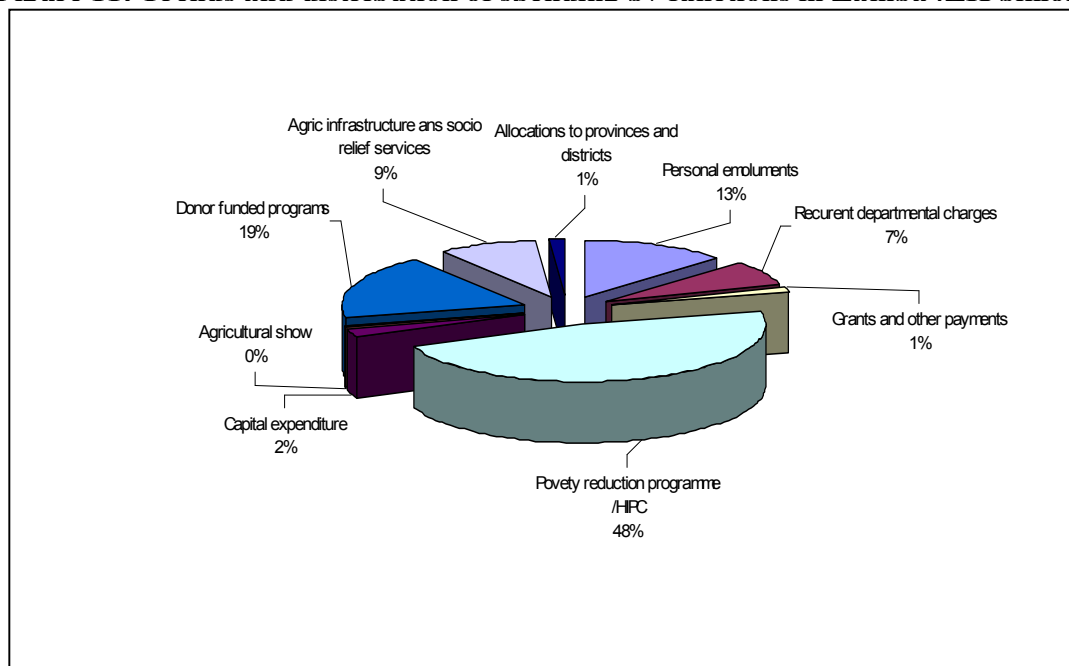


Note: *fertilizer support program and food research agency are included

Data source: Govereh, et al (2007)

² Chilonda, et al 2008

Figure 11: Trends and distribution of spending by functions in Zambia (ZK billion)



Data source: Govereh, et al (2007)

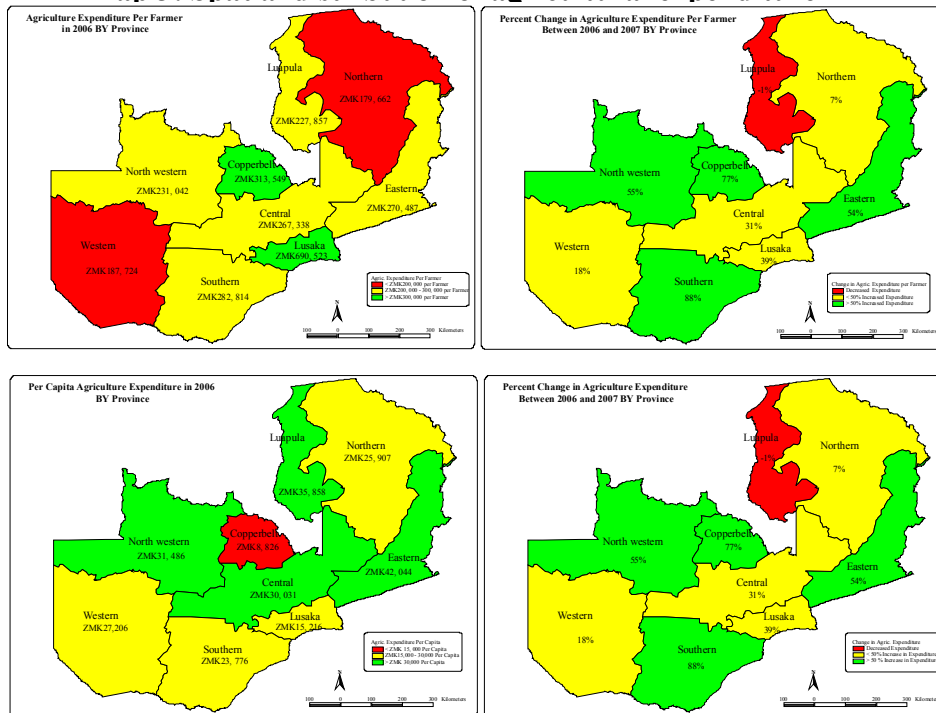
According to the Ministry of Finance and National Planning (2005) the Zambian government is focussing on food security, crop diversification, the opening up of new agricultural production areas, fighting livestock diseases and livestock restocking, and the expansion of cash crops for exports by small and large scale farmers (Zambian Ministry of Finance and National Planning, 2005). The targets for accelerated agricultural and economic growth as set out in the shared regional goals and national poverty reduction strategy are poverty eradication.

When examining the targeting of agricultural expenditure to assess whether the sector will be developed in such a way that it will not only serve as a driver for overall economic growth, but also address hunger and malnutrition, the various farming systems across the provinces and the climatic conditions in these provinces need to be considered.

Only the Southern and Western Provinces are irrigated. As maize mixed farming is the largest farming system in Zambia and is distributed across all the provinces, except the Southern Province, it would follow that increasing irrigation in the other provinces would be a priority. Considering the importance of livestock for food security and the decline in production of livestock, as discussed in the primary studies (Chilonda et.al. 2008), increased spending in the Southern and Western Province, where mixed farming combining agro-pastoral with millet and or sorghum takes place, would provide a large return on investment in terms of food security benefits. Root crop production is concentrated in the Northern, Luapula and Northwestern Provinces.

In 2006, the Eastern-, Northwestern-, Luapula and Central Province received a relatively higher share of the national public expenditure per capita on agriculture. The Copperbelt received the least. In 2007 investment was increased by more than 50% in the Southern - , Copperbelt, Northwestern- and Eastern Province. Lusaka, the Central - , Western- and Northern Province received less than 50% more investment and investment declined by 1% in Luapula.

Map 3: Spatial distribution of agricultural expenditure in



Source: MSU/FSRP Zambia and ReSAKSS-SA

Trends as observed in this study on public agricultural expenditure for 2006 and 2007 was examined by function for the provinces to reveal the expenditure pattern, enabling planning and policy objectives to be more directly linked to the budget, and thereby facilitating the tracking of whether policy priorities were being appropriately funded as done in this study. In 2006, macro donor projects appear to have had the largest share of spending for all the provinces, except in Lusaka, where the provincial agricultural co-ordinating office had the largest share, and the Northern Province, where the office of the president had the largest share. The provincial agricultural co-ordinating offices seemed to be the second largest expenditure component for all the provinces, except in the Northern Province and Lusaka. The office of the president took the third largest share in all the provinces and the food research agency the fourth largest (about 5% portion maximum). Fertilizer support programmes also feature in all provinces, but has a portion of a couple of percent at most.

The large portion of spending on macro donor projects necessitates the disaggregation of macro donor projects into sub-function spending components. The distribution in 2006

shows that the sub-program functions are province-specific, for example, support to agricultural development and food security only features in the Northwestern and Western Provinces. Smallholder agricultural production and marketing support projects, small holder livestock improvement programmes, and support to small and medium-scale trade and investment programmes cut across all the provinces. It is important to note that a small-scale irrigation program features in Eastern Province, one of the many areas where irrigated farming does not take place. In 2007 the Small Scale Irrigation Programme (SIP) has been extended to include the Southern Province as well and a relatively higher proportion of support to agricultural diversification and food security only feature in the Northwestern and Western Provinces. Smallholder agricultural production and marketing support projects features across all the provinces. (FSRP, Zambia). The SIP needs to be rolled out in all provinces.

Conclusions and policy implications

The picture that emerges for the SADC region is of one not making expected progress toward meeting the Maputo target for agriculture expenditures. More countries must follow Malawi's lead and increase agricultural investment sharply. The impressive trends in Malawi's spending on agriculture may not be divulge from the politically driven inputs subsidy programme. However the efficacy of such drive in relation to achieving the desired 6% agricultural growth is yet to be demonstrated. Until recently development programmes from government declined in share as compared to support from donors. The government needs to revisit this situation in order to ensure leadership of the agriculture development agenda. Much focus is put in livestock/crops sub-sector at the expense of fisheries and forestry that equally has potentials to be explored. Most resources are being committed to recurrent activities and the food security programme (includes food imports and subsidies) rather than development activities. While land and water management programme spending growth rate dwindled after the declaration. The Malawian government needs to engage a deliberate policy to support its own development agenda i.e. the MGDS and CAADP led Agriculture Development Programme which prioritizes research, technology generation and dissemination, land and water management, agri-business and market development, food security and risk mitigation and institutional development and capacity building. Overall apart from the general aggregate rise in agriculture spending, all the ADDs benefited from higher expenditure growth rates over time. And the aggregate expenditure growth in the agriculture sector did not only benefit one geographical zone.

The trends and spatial distributions of public spending in agriculture in Malawi and Zambia give general information that can guide policy on how best to allocate public spending in agriculture and how governments can achieve higher and more sustained returns from these spending, what expenditures are most likely to contribute to achieving faster growth rates in agricultural GDP in order to reach the shared goal of accelerated agricultural growth. This is especially necessary as most countries on average have larger proportion of their populations engaged not only in agriculture but lives in rural areas where predominant economic activity is agriculture. The fact that reduction among the non-farm household is faster than farm household in Zambia lend credence to this policy response.

The balance between “productive” and “safety net” components of the agriculture budget is not clear, but the steadily expanding development element in Malawi and farm households in Zambia suggests grounds for optimism that productive elements are receiving attention. Their potential for spurring growth in the agricultural sector has yet to be established, but their potential for protecting hard-won development gains should not be underestimated. Thus, the quality of public spending - the efficiency and equity of resource use - is an even more important issue in addressing increased spending on agriculture in the region.

Increased public spending in agriculture can enhance contribution of agriculture to poverty reduction in a number of ways. One, it can reduce poverty by enhancing productive capacity of the majority population. Second, it can increase the chance of the poor to contribute to the growth process by strengthening human capabilities and reducing transaction costs as agriculture becomes a profitable venture. For examples, higher spending makes it cheaper to produce high value-products and thereby raise farm household income as so they invest more which implies growth in agricultural production, productivity and sustainability. This also has potential not only to be a safety net for the rural poor as more than 60% of the region’s population live in rural area as it may, in some cases, in short-term also raise domestic revenue generation in form of taxable income.

Increased spending on core public goods - science, infrastructure, and human capital - combined with better policies and institutions are necessary. It is clear that governments must increase spending - especially in agricultural research, rural infrastructure, and education - to support agricultural growth. This type of spending not only yields high returns in agricultural production, but also has a large impact on poverty reduction because most of the poor still reside in rural areas and their main source of livelihood is agriculture. In order to harness the contribution of agriculture to economic growth and poverty reduction, increased spending on intensive agriculture is required among other things.

In addition to increasing spending in these areas, governments should also improve the targeting and efficiency of social safety nets to the poorest of the poor. Investment on agricultural productive capacity needs to receive greater attention in order to take the opportunities presented by the recent and global rising food prices in the context of achieving the first millennium development goals (MDG1) of halving hunger and poverty, especially to increase the productive capacity base of the majority poor who are net producers of staple food and food commodities. One such opportunity is being extended to smallholder farmers as the World Food Program is being prepared to begin buying food from local farmers in developing countries, including Southern African countries (IRNI, 2008). Shenggen and Rosegrant (2008) report an indicative scenario of a \$5.75 billion agricultural investment has the potential to raise agricultural production towards achieving significant progress towards the MDG1 in nine countries in Sub-Saharan Africa, including Southern African countries. The Southern African counties, given their poverty reduction rates and the role of agriculture in their respective

economies, then need to find their positions within this investment-growth paradigm to apportion the right financial resources to agricultural research, rural roads and irrigation development. This has, in the long run, potential to increase farm income and reduce poverty among the net producers of food whose prices are soaring, especially if their supply response is not constrained by the rising cost of production.

References

FAOSTAT. 2008. United National Food and Agriculture Organizationa Statistical Database. www.faostat.fao.org

Malawi. 2008. National Statistical Office of Malawi, <http://www.nso.malawi.net>.

UNECA. 2007. Africa Review Report on Agriculture and Rural Development. Addis Ababa: UN Economic Commission for Africa.

World Bank. 2008a. World Bank Development Indicators. www.worldbank.org

Njiwa, D., I. Kumwenda, I. Thindwa, P. Chilonda, F. Olubode, and A. Davids. 2008. "Monitoring Trends in Public Expenditures in Agriculture: Case of Malawi." Unpublished ReSAKSS Manuscript.