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Monitoring Trends in Public Spending on Agriculture: The Case of Malawi

Daniel Njiwa, Ian Kumwenda, Innocent Thindwa, Pius Chilonda, Femi Olubode-Awosola and Adlai Davids

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ABBREVIATIONS AND ACRONYMS

ADB	African Development Bank
ADD	Agricultural Development Division
ADMARC	Agricultural Development and Marketing Corporation
ADP	Agricultural Development Programme
CAADP	Comprehensive African Agriculture Development Programme
DFID	Department for International Development
EU	European Union
FAO	Food and Agricultural Organization of the United Nations
FIDP	Farm Income Diversification Programme
GDP	Gross Domestic Product
GoM	Government of Malawi
IDAF	Institutional Development across the Agri-Food Sector
IFPRI	International Food Policy Research Institute
IRLAD	Irrigation and Rural Livelihoods Agricultural Development Programme
JICA	Japanese International Cooperation Agency
MASIP	Malawi Agricultural Sector Investment Programme
MGDS	Malawi Growth and Development Strategy
MoAFS	Ministry of Agriculture and Food Security
MoIWD	Ministry of Irrigation and Water Development
NEPAD	New Partnership for Africa's Development
PIU	Programme Implementation Unit
ReSAKSS-SA	Regional Strategic Analysis and Knowledge Systems for Southern Africa
USAID	United States Agency for International Development

EXECUTIVE SUMMARY

This report presents the results of studies that explore trends in the magnitude, share and compositions of public spending on the agriculture sector in Malawi which comes under the Ministry of Agriculture and Food Security (crops, livestock and irrigation), Fisheries and Forestry. The aim of the studies was to analyze the recent trends in levels of public spending in agriculture and the progress Malawi is making towards achieving the AU/NEPAD target of allocating at least 10% of its national budget to the agriculture sector.

To achieve this, the studies used data from 1999/00 to 2006/07 on public spending on agriculture from the Ministry of Planning and Development. The public spending (a) as planned and disbursed (actual) and (b) on development (capital) projects vis-à-vis the recurrent projects and by sources, government versus donors was analyzed. Spending by functions in terms of crops, livestock, fisheries and forestry and trends in spatial or geographical allocation were also explored with trends analyses.

In addition, the studies aim to show whether resource potentials are explored in allocating public spending among development programs or subprograms as well as across agricultural development divisions.

The key findings are as follow:

- There seems to be an increase in spending on agriculture since the Maputo Declaration in 2003. Malawi's agriculture sector has reached an average of 9.52% of the national spending in the period under review (1999-2006) with proportions of over 10% over the past three fiscal years (2004/05, 2005/06 and 2006/07). The bulk of this spending was on subsidy programs. Growth in spending is higher after the Maputo Declaration indicating some shift in policy. The crops/livestock had the largest increase. A review of literature also shows that national priorities in terms of funding allocation have favored agriculture in the recent past
- Substantial spending on agriculture seems to correlate with better agricultural growth except in financial years 2001/02 and 2004/05 when the sector performed badly, which can be easily attributed to droughts. The large spending in the financial year 2005/06 was due to major food imports and distribution costs after the drought year.
- There seems to be an appreciable gap between the planned and actual spending before 2005/06. This gives an indication of budget deficits in public spending in agriculture. Recent trends (2005/06 and 2006/07) however have seen implementing institutions receiving more funds than requested.
- Government contribution towards the development budget in agriculture has been low, i.e., averaging 14% against 80% from donors.
- Agriculture (crops/livestock) followed by forestry accounts for the largest share of total spending for the sector. The crops/livestock function includes administrative and support services, extension and extension management services, nutrition and food security including subsidies, land and water management services including irrigation and lastly research and technology generation and development. This is a major area of spending on agriculture with an average of 79% of total spending in the past 8 years in cash terms and up to an average of 87% in real terms.

- The huge spending on the subsidy program (which is largely recurrent) under "Agriculture" in the past 3 years influenced a shrink in the proportion of forestry and fisheries spending in both real and cash terms. The development budget did not offer a different perspective either.
- Across the Agricultural Development Divisions (ADDs), government aggregate spending for agriculture is increasing with time. This is evident in almost all the eight ADDs of the country.

Not much general information that can guide policy response emanates from the trends and distributions. Government needs to continue allocating more resources to agriculture, specifically for forestry and the priority programs of the CAADP/ADP in order to achieve the desired growth. It is necessary to increase allocation to the development budget, which is currently being run under external donor support. Specific attention needs to be paid to the areas which really require that much of resources, depending on their agroecological characteristics and production potentials.

CHAPTER 1

INTRODUCTION AND RATIONALE

Country Background

Malawi, a landlocked country spread over an area of 118,484 km^2 with a population of about 13 million (Table A4) (over 80% living in rural areas), has one of the lowest levels of per capita income in the world (US$170 in 2006). Poverty continues to be widespread and there has been only very modest progress in reducing poverty and inequality over the past decade.

According to the Integrated Household Survey, 2004/05, some 52.4% of the population is living below the poverty line and 22.4% are classified as ultra poor, or unable to meet recommended daily food needs. The southern region is the poorest with a poverty rate of 60%, followed by the northern region with 54% and last the central region with 44%. The rural areas are poorer (56%) than urban areas, with 25% of the total population. Approximately 30% of the poor moved out of poverty between 1998 and 2004/05, while 30% of the nonpoor moved into poverty. This suggests that a large proportion of householders live at the margins of poverty.

In 2002, the Government of Malawi (GoM) launched the Malawi Poverty Reduction Strategy (MPRS) in order to achieve "sustainable poverty reduction through empowerment of the poor." The implementation period for the MPRS was 3 years and it came to an end in the fiscal year 2004/05. A modest decline in poverty levels from 54.1% (in 1998) to 52.4% (in 2004/05) followed the period of MPRS, though the economic performance of Malawi between 2001 and 2004 was disappointing. The growth of real Gross Domestic Product (GDP) averaged only 1.5% per annum. The MPRS was reviewed during the second half of 2005, and reformulated as the Malawi Growth and Development Strategy (MGDS), 2006-2011. The macroeconomic framework of the MGDS is based on the commitment to the Poverty Reduction and Growth Facility, and the economy is expected to grow 6.0% annually during the period 2006-2011.

At the regional and international levels, local efforts to achieve growth and reduce poverty are supported by the framework of the NEPAD Programme/CAADP as well as the Millennium Development Goal number 1 (MDG 1).

The Agricultural Economy

Agriculture is the single most important sector of the economy as it employs about 80% of the workforce and contributes over 80% of foreign exchange earnings and about 39% of the GDP. Overall, it contributes significantly to national and household food security. However, agriculture in Malawi is characterized by low and stagnant yields, and its high dependence on rain-fed farming increases vulnerability to weather-related shocks, low level of irrigation development and low uptake of improved farm inputs (Chilonda and Machethe 2007).

The MGDS, which is the overarching policy document for Malawi, prioritizes agriculture as the driver of economic growth and recognizes that food security is a prerequisite for economic growth and poverty alleviation. The MGDS focuses on increasing agricultural productivity and integrating smallholder farmers into commercial activities. These farmers currently allocate approximately 85%

of their land to maize production. Most continue to experience difficulty producing enough grain to meet their consumption requirements.

In response to the broader national and international policy aspirations for growth, the Ministry of Agriculture and Food Security has embarked on the formulation of a program-based Agricultural Development Programme (ADP). This is an innovative priority investment framework that guides the government and its development partners in the implementation of results-oriented priority programs for the agriculture sector. Through the Ministry of Agriculture and Food Security (MoAFS), its cooperating partners and the private sector, the government envisages focusing its investments in achieving the following priority areas:

- Improved food security at household and national levels.
- Commercial agriculture, agro-processing and market development.
- Sustainable agricultural land and water management.

The framework considers climate change, gender and HIV and AIDS as crosscutting issues. The framework also prioritized key support services of research and extension, institutional development and capacity building for efficient implementation of strategies.

In support of the aspirations of the government through the MGDS and the ADP, parallel efforts are being initiated to strengthen the analytical base on which strategies aiming at achieving growth are built. One such effort is to understand how much is spent on particular agricultural programs and where it is spent.

Overview of Public Spending in Agriculture

Agriculture is the largest sector in Malawi enjoying a substantially large allocation of the total national budget. Spending for the sector includes that on irrigation, fisheries and forestry. The funding areas are largely subdivided into two broad categories, i.e., recurrent and development spending.[1] Chapter 2 gives a more detailed analysis of spending on agriculture.

Administratively, spending on agriculture is disaggregated according to national and local levels. The spending of MoAFS headquarters includes that by various departments in crops, livestock, forestry, fisheries and other support services at the national level. The spending of headquarters however extends to satellite offices located in various ADDs.[2] The Decentralization Policy and Local Government Act of 1998 translated into districts developing their own annual work plans and budgets for a number of sectors including agriculture. This means therefore that districts get direct funding for their agricultural activities from the Ministry of Finance. A detailed analysis of spending by the districts is provided in chapter 5 of this report.

The recurrent budget of the Ministry of Agriculture and Food Security largely supports agricultural subsidies, parastatals such as the Agricultural Development and Marketing Corporation (ADMARC) to meet its social marketing objectives and the National Food Reserve Agency. Some funds are

[1]Development expenditures refers to all such expenditures as those accruing to activities being implemented in the domain of a project or program run under a Programme Implementation Unit (PIU) outside the mainstream ministry but largely supported by donor funds for a defined period of time.

[2]ADDs are areas which comprise two or more districts with similar agroecological characteristics. The ADDs are represented through satellite offices that provide technical backup to district agricultural activities.

allocated to agricultural activities through the district assemblies, which are reflected under the vote of the Ministry of Local Government. These funds are largely used to cater to the implementation of agricultural extension activities, while the administrative role for personnel emoluments in these district assemblies still remains under the Ministry of Agriculture.

The aggregate spending on agriculture has hovered around 9% of the total national spending between 1999/00 and 2006/07 with a minimum of around 4% and a maximum share of up to 17% in the 2005/06 financial year. Of this level of spending, an average of over 20% came from donors with declining levels of less than 20% in recent years. Spending of the ministry on development is largely supported by donor commitments, through loans and grants. These are a major component of the capital budget during the greater part of the period under review. The following include some of the major donor-funded programs under the Ministry of Agriculture and Food Security: the Irrigation and Rural Livelihoods Agricultural Development (IRLAD) Project, the Farm Income Diversification Programme (FIDP) and the Institutional Development across the Agri-Food Sector Programme (IDAF) among others.

Table 1 indicates how the priorities have been spelt out in the various budget statements over the years. Agriculture has been treated as priority number three for a long period; it is only of late that it has begun to get prominence in terms of priority.

Table 1. Government priorities based on budget statements.

Year	Priority 1	Priority 2	Priority 3	Priority 4	Priority 5
1996/97	Education	Health	Agriculture	Roads	
1997/98	Education	Health	Agriculture	Roads	
1998/99	Education	Health	Agriculture	Roads	
1999/00	Education	Health	Agriculture	Roads	
2000/01	Education	Health	Agriculture	Water and Sanitation	
2001/02	Health	Education	Water and Sanitation	Community Services	Agriculture
2002/03	Education	Health	Agriculture	Water and Sanitation	Roads
2003/04	Education	Health	Agriculture	Water and Sanitation	Roads
2004/05	Education	Health	Agriculture	Transport	
2005/06	Agriculture	Information and Tourism	Development of the trade and private sector	Water and Sanitation	Industry, Science and Technology
2006/07	Agriculture	Transport Infrastructure	Energy	Rural Development	

Source: MoAFS 2007.

The consequences of treating the agriculture sector as priority number three has been poor allocation to it between the late 1990s and early 2000s undermining specialist services such as research and extension services. While a detailed analysis of the spending of the agriculture program follows in subsequent sections of the report, Figure 1 shows nominal and real agriculture per capita spending as compared with the priorities in Table 1 above during the period under review.

Figure 1. Proportion of spending on agriculture to national population.

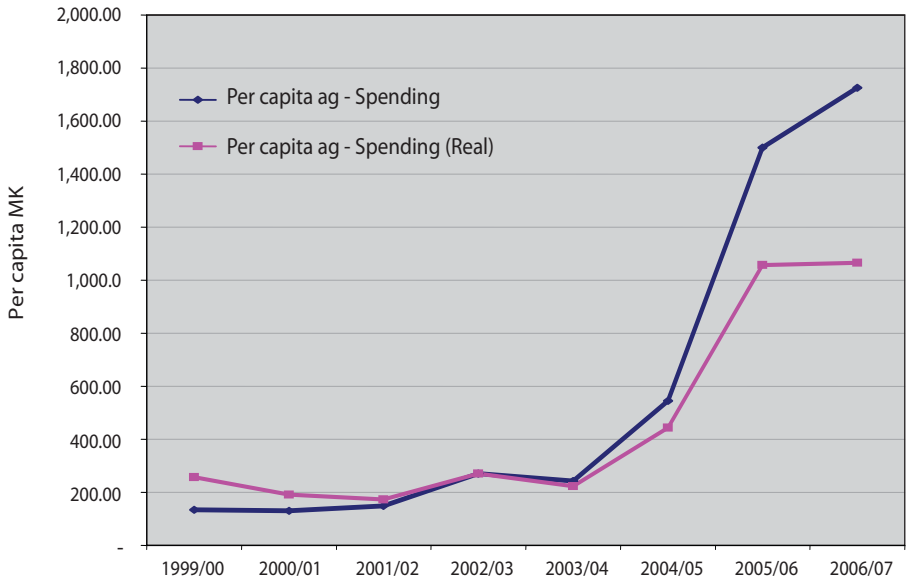


Figure 1 clearly agrees with the government's priority shown in Table 1 which shows a big increase in the real and nominal per capita spending on agriculture for years 2005/06 and 2006/07.

Justification for the Study

Malawi has broadly committed itself to the African Union and NEPAD objectives of pursuing a 6% average annual growth rate in the agriculture sector. Malawi has correspondingly committed itself to invest at least 10% of its national budget towards the pursuit of these objectives and targets. At the national level, the MGDS targets are to increase the contribution of agriculture to economic growth, by increasing not only production for food security but also agro-processing and manufacturing for both domestic and export markets.

It is in line with this effort that NEPAD, through the Regional Strategic Analysis and Knowledge Support System for Southern Africa (ReSAKSS-SA) in collaboration with national governments, would like to monitor trends in public spending on agriculture across countries. This is one way of supporting the implementation of the CAADP as reflected by national efforts such as the ADP of Malawi. The Government of Malawi in general and the Ministry of Agriculture in particular have seen the ReSAKSS-SA initiative as a big opportunity to support the government's own local efforts in undertaking similar exercises. The MoAFS has previously attempted to carry out public spending reviews, i.e., in 2000 and 2005, under the sponsorship of the World Bank. Lack of adequate capacities in the ministry to comprehensively handle this type of assignment has in both instances led to the production of reports that are not easily acceptable to either the government or the World Bank. The aspect of mapping spending patterns in this analysis has provided an additional value for better decision making.

This exercise therefore assists in detailing public spending on agriculture in a historical context and guiding policy decisions in targeting investments within and between programs or subprograms as well as within geographical and agroecological zones. It further assesses whether the current spending levels are meeting the Maputo Declaration rate of 10% and, if not, for how long, and by how much, should the present trends be maintained.

Methodology

A team of local experts was set up for government budgeting. This team conmprised representatives from the Ministries of Finance, Economic Planning and Development, Irrigation and Water Development, Environmental Affairs and Natural Resources and, of course, from the Ministry of Agriculture and Food Security (refer Table A3, p.28).

The data on spending were collected in terms of requested funds, and approved and eventually actual spending. Audited budget books were used for the period 1999/00 to 2003/04 while approved estimates of spending on recurrent and capital budgets were used for the period 2004/05 to 2006/07.

After a close scrutiny of the available documents however, the team decided to do away with the requested aspect of the data because no credible figures could be sourced to reflect requests. These data were collected along all relevant sector ministries where there had been agriculture-related spending. Tracking involved all funding sources, i.e., government and donors going through the Ministry of Finance or directly to individual implementing ministries or departments over a period of 5 years. The analysis involved expressing spending as a percentage of agriculture GDP, as a percentage of total GDP, as a percentage of total national spending, program spending as a percentage of spending on agriculture and preparing charts and plotting graphs as illustrations.

Organizing consistent and detailed time series on government spending is a rather complicated and cumbersome process due to a number of reasons. Notable challenges included the following:

- Constructing consistent time series is a challenge because of changes in formats and/or programs for budgeting and reporting.
- As the comparability of spending across subprograms over the years was limited the study did not go to that level of detail.
- There was difficulty in tracking spending for donor support to projects by program, subprogram and by geographical zones. This is because the funding is often not centrally coordinated and there is no reporting system for tracking project spending by area or program.

CHAPTER 2

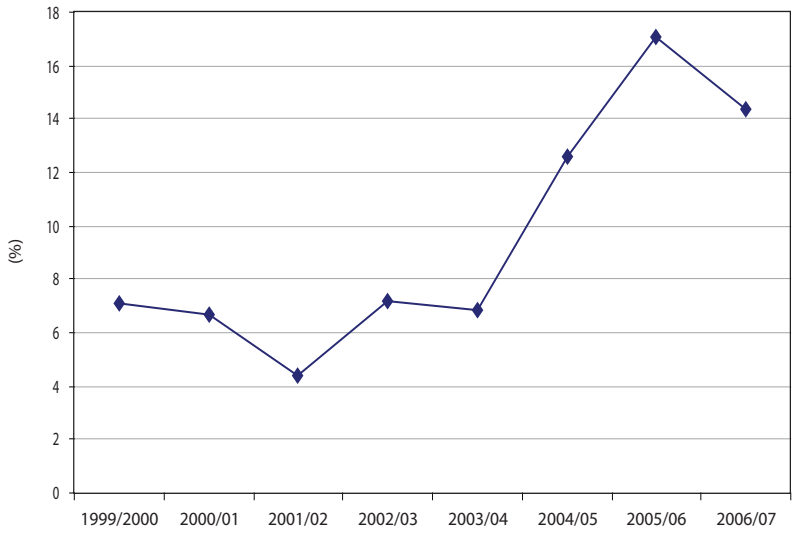
SPENDING ON AGRICULTURE AND GROWTH TRENDS

Spending on Agriculture as a Percentage of National Spending

One of the major objectives of NEPAD through CAADP is to seek better ways of making agriculture grow sustainably. Under CAADP individual nations have pledged to allocate a minimum of 10% of the total national budget to the agriculture sector. This is a recognition of the fact that increasing investments in the agriculture sector are necessary for the sector to contribute substantially to economic growth and meeting the first millennium development goal (MDG1). However, questions still remain as to what constitutes agricultural investments, how to allocate agricultural budgets among different subsectors within agriculture and how to ensure the efficient use of increased agricultural budgets.

Figure 2 below illustrates the trends in terms of proportion of spending on agriculture to total national spending in Malawi. Malawi's agriculture sector has enjoyed an average of 9.52% of the total national spending in the period under review (1999-2006) with proportions of over 10% over the last three fiscal years, i.e., 2004/05 through 2006/07.

Figure 2. Proportion of spending on agriculture to national spending.



Source: GoM 2007.

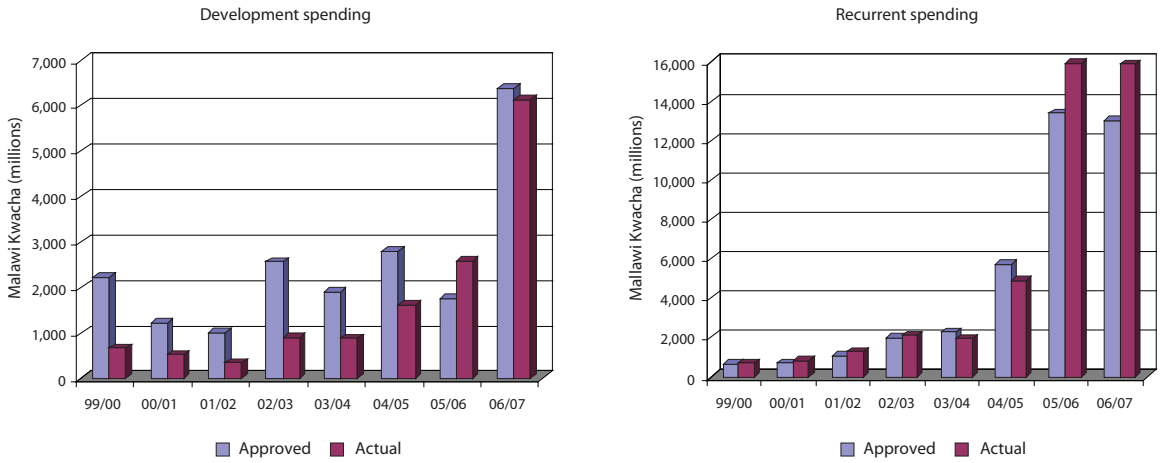
Apart from the recurrent activities implemented under crops, livestock, fisheries and forestry, the recent trend in proportion to national spending has been influenced by the strong drive in the subsidy program adopted by the government.

Planned Versus Actual Spending

In monitoring and assessing trends in public spending on agriculture it becomes equally imperative to measure the level of government commitment in disbursing requested funds to implementing institutions and departments. An analysis was therefore done in order to assess the difference between what was planned against what was actually disbursed and spent.

The results of the analysis as depicted in Figure 3 above show that the period under review was largely characterized by noncommitment in terms of meeting the requests of implementing departments in disbursing the recurrent budget while the reverse was the case for disbursing the development budgets. This picture was however the other way round in the fiscal years 2005/06 for spending on development and in 2003/04 and 2006/07 for recurrent spending. This is a positive development as far as tracking spending under CAADP is concerned. An in-depth scrutiny of the same however reveals that the over-disbursement in the recent years has been largely due to overruns in costs of implementing the subsidy programs which have since their inception registered overspending. Admittedly, the Ministry of Finance has demonstrated to be very committed to funding the operational recurrent budget per cash flow in the same years. The situation is worse in the case of the development budget due, in part, to poor government contribution to projects.

Figure 3. Difference between planned and actual spending.



Sources: Computed from various budget documents of GoM 1998; 1998a, b, c; 2000; 2001; 2002; 2003; 2004a, b; 2007; 2007a, b.

Growth in Spending on Agriculture

In order to consolidate the assessment of whether individual countries are meeting the Maputo Declaration in allocating at least 10% of their national budgets to agriculture, the study endeavored to understand growth in spending between periods before and after the Declaration of 2003.

Table 3 illustrates the snapshot aggregate spending levels for agriculture (crops and livestock), fisheries and forestry before, during and after the Declaration was made. Figure 4 then shows the growth rates in spending by subsector and as a total of spending on agriculture. This illustration aims to understand whether there has been a significant policy shift on how government supports the sector.

Table 2. Spending on agriculture and growth rates.*

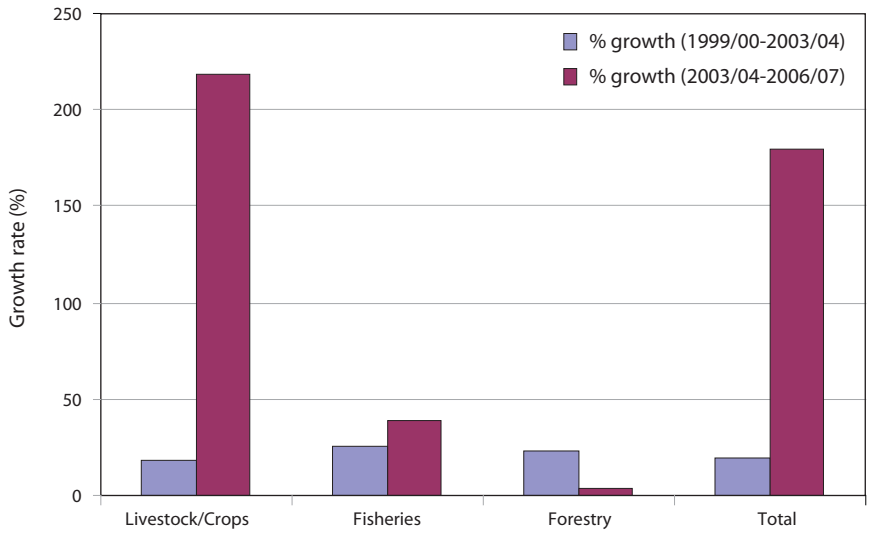
	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07
Spending on agriculture as a % of national spending	7.1	6.7	4.4	7.2	6.8	12.6	17.1	14.35
Total spending on agriculture as a % of agriculture GDP	44.1	29.4	30.5	3.2	2.6	4.7	19.3	14.2
% of growth rates for agriculture	10.1	5.3	(6.0)	2.7	3.7	2.8	(8.5)	11.9
GDP growth rate	3.5	0.8	(4.1)	2.1	4.2	5.0	2.3	7.9
% of contribution to GDP	37.8	39.5	38.8	39.0	35.7	34.9	31.3	32.4
Total: Planned vs actual (%)	(109.9)	(39.6)	(30.3)	(49.9)	(48.3)	(31.0)	18.1	11.8
Development: Planned vs actual (%)	(231.8)	(131.8)	(192.0)	(182.5)	(115.7)	(72.3)	31.4	(4.3)
Recurrent: Planned vs actual (%)	7.1	18.8	14.0	6.9	(17.3)	(17.2)	15.9	18.0

* Table 2 also shows comparisons between planned expenditures versus actual expenditures for total, development and recurrent allocations.

Sources: Computed from various budget documents of GoM 1998, 1998a, b, c; 2000; 2001; 2002; 2003; 2004a, b; 2007; 2007a, b.

Figure 4 shows a clear increase in government spending in livestock/crops and the fisheries subsectors. The shift is also significant enough to influence the aggregate growth rate in spending for the sector to average 180% during the post-declaration period. At the subsector level the results indicate that fisheries and livestock/crops have attained higher growth rates in spending after 2003/04. This corresponds well with the contents in Figure 1 which show that the country has been allocating over 10% of its national budget to the agriculture sector in a similar period.

Figure 4. Pre- and post-Maputo Declaration on growth rates of spending.



Sources: Computed from various budget documents of GoM 1998; 1998a, b, c; 2000; 2001; 2002; 2003; 2004a, b; 2007; 2007a, b

Tables 3 and 4 however show the relative growth rates in spending between recurrent and development contributions. The livestock/crops subsector still demonstrates significant growth rates for both recurrent and development spending (over 200%) when compared with the period before and after the Maputo Declaration. Similarly, in this analysis, fisheries and livestock and crops assume desirable trends especially for the recurrent spending.

Table 3. Subsector spending and growth rates.

	Million MK			Growth rates (%)	
	99/00	03/04	06/07	99/00–03/04	03/04–06/07
Livestock/Crops	1,056.0	2,070.6	21,044.5	18.3	218.8
Fisheries	87.3	216.1	415.6	25.4	38.7
Forestry	223.7	522.5	562.6	23.6	3.8
Total	1,367.0	2,809.2	22,022.7	19.7	180.0

Sources: Computed from various budget documents of GoM 1998; 1998a, b,c; 2000; 2001; 2002; 2003; 2004a, b; 2007; 2007a, b.

Table 4. Recurrent subsector spending and growth rates.

	Million MK			Growth rates (%)	
	99/00	03/04	06/07	99/00–03/04	03/04–06/07
Livestock/Crops	481.9	1,481.9	15,229.6	32.4	87.2
Fisheries	32.9	61.9	142.2	17.2	19.2
Forestry	182.7	380.6	525.6	20.1	9.2
Total	697.5	1,924.5	15,897.4	28.9	80.4

Sources: Computed from various budget documents of GoM 1998; 1998a, b, c; 2000; 2001; 2002; 2003; 2004a, b; 2007; 2007a, b.

Table 5 reveals interesting results whereby we notice that the Government of Malawi and its cooperating partners have not supported the fisheries and forestry development activities at a rate comparable to livestock/crops. Results reveal a dwindling growth rate for both fisheries (14%) and forestry (approximately -80%). The situation is serious for the forestry subsector which has a record negative growth rate. Table 5 shows subsector spending on development and growth rates.

However, as in the case with recurrent spending, the results show a positive and desirable aggregate (94%) growth rate.

Table 5. Subsector spending on development and growth rates.

	Million MK			Growth rates (%)	
	99/00	03/04	06/07	99/00–03/04	03/04–06/07
Livestock/Crops	574.1	588.7	5,814.9	0.6	218.9
Fisheries	54.4	154.1	273.4	29.7	14.0
Forestry	41.0	141.9	37.0	36.4	-79.0
Total	669.6	884.7	6,125.3	7.2	94.2

Sources: Computed from various budget documents of GoM 1998; 1998a, b, c; 2000; 2001; 2002; 2003; 2004a, b; 2007; 2007a, b.

CHAPTER 3

CLASSIFICATION OF SPENDING ON AGRICULTURE FOR MALAWI

Time Boundary

The analysis of spending on agriculture was also done in terms of time boundary. Data on spending on agriculture were collected in terms of the year in which it was spent and in which there were major programs. Table 6 shows the distribution of spending by year.

From Table 6 it is clear that spending on agriculture by the Department of Forestry gets the lion's share of the total spending for the sector. A more detailed analysis of the share of spending on agriculture across subsectors is covered in chapter 5.

Table 6. Spending on agriculture by year.

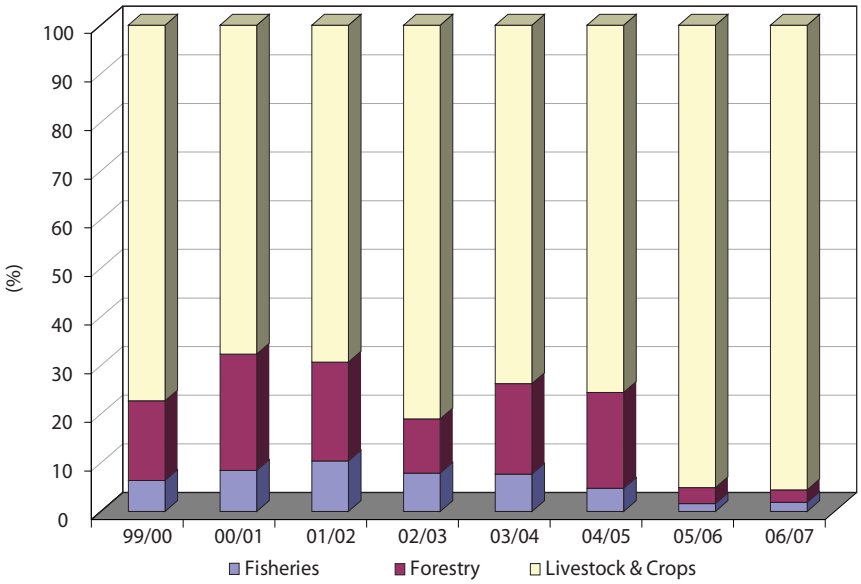
	Agriculture (crops/ livestock) (million MK)	Fisheries (million MK)	Forestry (million MK)	% crop/ livestock in total agriculture	% fisheries in total agriculture	% forestry in total agriculture
1999/00	1,056.0	87.3	223.7	77.2	6.4	16.4
2000/01	928.1	115.7	328.1	67.7	8.4	23.9
2001/02	1,112.1	166.8	326.0	69.3	10.4	20.3
2002/03	2,452.7	239.1	337.0	81	7.9	11.1
2003/04	2,070.5	216.1	522.5	73.7	7.7	18.6
2004/05	4,917.3	310.4	1,282.7	75.5	4.8	19.7
2005/06	17,601.8	301.2	607.4	95.1	1.6	3.3
2006/07	21,044.5	415.6	562.6	95.6	1.9	2.6

Sources: Computed from various budget documents of GoM 1998; 1998a, b, c; 2000; 2001; 2002; 2003; 2004a, b; 2007; 2007a, b.

Functional Distribution

The analysis is restricted to three major functions which constitute the broad boundaries of the agriculture sector, such as crops and livestock, fisheries and forestry as depicted in Figure 5 below.

Figure 5 (a). Subsector contribution to total agriculture.



The analysis in figures (b) and (c) also complements efforts by the AU/NEPAD spending on agriculture tracking system in monitoring government's commitment to the Maputo Declaration of 2003 in allocating at least 10% of the national budget to agriculture. The analysis therefore attempts to disaggregate to what extent various subsectors in agriculture are being supported under the recurrent and the development budgets over time. Table A1 (Page 26) shows the spending levels for the subsectors in terms of the recurrent and development budgets.

Figure 5 (b). Subsector share of the development budget.

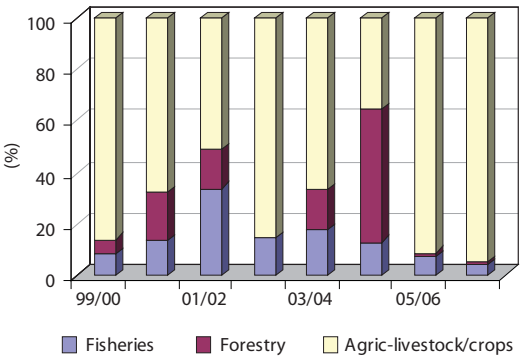
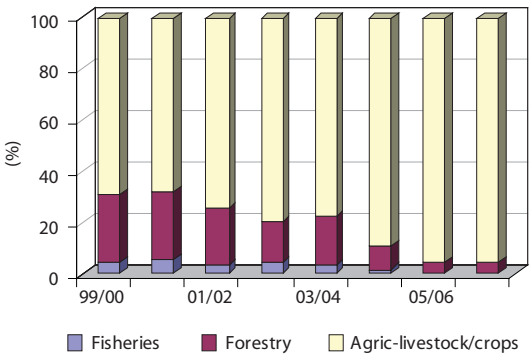


Figure 5 (c). Subsector share of the recurrent budget.



Sources: Computed from various budget documents of GoM 1998; 1998a, b, c; 2000; 2001; 2002; 2003; 2004a, b; 2007; 2007a, b

Agriculture: Crops and Livestock

The functions of crops and livestock include administration and support services, extension and extension management services, nutrition and food security, which include subsidies, land and water management services that, in turn, include irrigation and, lastly, research and technology generation and development. This is a major area of spending on agriculture having an average of 79% of total spending on agriculture in the past 8 years in cash terms and up to an average of 87% in real terms.

The heavy spending in the subsidy program (which is largely recurrent) under "Agriculture" in the past 3 years influenced a shrink in the proportion of spending on forestry and fisheries in both real and cash terms. The development budget did not offer a different perspective either.

Analysis of Program-Level Spending

The importance of the AU/COFOG in the analysis of spending is seen in the fact that it is easy to do a cross-country assessment against the principles of the Maputo Declaration of 2003. This report however extends the analysis in order to benefit the local policy reform processes such us the ADP. This section analyzes program-level spending for the agriculture sector of Malawi which directly informs government and cooperating partners on which areas new investments should focus to realize the much-needed outputs.

The classification of program names is therefore a direct reaction to the key focus areas that have been prioritized under the ADP through evidence-based analysis from the IFPRI/ Malawi agricultural growth model and several assessment studies conducted by country-led working teams in agribusiness and market development, sustainable land and water management, food security and risk management, research, technology generation and dissemination and, finally, institutional development and capacity building.

Tables 7 and 8 show the yearly program spending and average spending by program from 1999/00 to 2006/07 and corresponding growth rates by program before and after the Maputo Declaration, respectively.

Table 7. Yearly program spending.

	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07
Administration and support	756.80	678.30	477.10	922.70	671.60	603.50	1,125.50	4,971.60
Agricultural extension	174.90	158.50	255.10	563.40	634.30	797.00	907.80	2,239.60
Nutrition and food security	-	-	-	-	52.10	2,877.60	13,099.00	12,841.00
Land and water management	31.40	44.70	267.70	721.20	566.40	407.10	2,134.50	482.10
Research and technology	92.50	46.50	112.20	245.40	146.00	232.20	335.00	510.10

Sources: Computed from various budget documents of GoM 1998; 1998a, b, c; 2000; 2001; 2002; 2003; 2004a, b; 2007; 2007a, b.

Table 8. Average program spending and growth.

Name of program*	Average spending by program (million MK)	Real growth rates (%)	
		99/00–03/04	03/04–06/07
Administration and support	1,275.9	-19.2	150.0
Agricultural extension	716.3	14.8	46.0
Nutrition and food security	7,217.4	-	84.0
Land and water management	581.9	71.5	-5.2
Research and technology	215.0	-6.7	29.1

* The naming of the programs was agreed upon by the Public Expenditure Review working group with the aim of adding value to the ongoing process of formulating the ADP which focuses on a few key result areas, such as food security, commercial agriculture, agro-processing and market development, sustainable land and water management, technology generation and dissemination and institutional development and capacity building (MoAFS 2007). Details of what comprises each program are given in Table A2 (page 27) of this report.

Sources: Computed from various budget documents of GoM 1998; 1998a, b, c; 2000; 2001; 2002; 2003; 2004a, b; 2007; 2007a, b.

Administration and Support Services

The analysis in Table 8 clearly shows that with the exception of the introduction of nutrition and food security program in 2003/04, the Government of Malawi spends more in the Administration and Support Services Programme of the Ministry of Agriculture than on other programs. However, apart from personal emoluments, this program is the recipient of a huge spending budget under the development budget. The development spending appears under the Planning Services Department which falls under a broad "Administration and Support Services Programme." The recent growth rates, i.e., 150%, therefore reflects the recent massive investment in the development budget through the World Bank/GoM-funded Irrigation and Rural Livelihoods Agricultural Development (IRLAD) Project, the EU-funded Institutional Development across the Agri-Food Sector Programme (IDAF) and the FIDP. Some forms of subsidy, such as by the Targeted Input Program and/or the Starter Pack Initiative, were also given under this program for the period before 2003/04.

In order to isolate the various items of subprogram spending of the development budget from the broader "Administration and Support Services Programme," there is a need to undertake a much more specific and detailed study with respective project/program implementation units (PIUs).[3] The challenges encountered in this proposed study shall inevitably include lack of data due to poor and inconsistent data management for specific activities implemented by project management units, districts and other non-state actors being supported under such programs. Other data may also not be available because projects have short life spans making it difficult to manage such data after the closure of the project.

This problem however is going to be minimized through the program-based ADP which propagates basket/pooled funding in support of agreed policy objectives under government/MoAFS leadership.

[3] Project Implementation Units (PIUs) are semiautonomous institutions or bodies separated from the mainstream ministry's structure and have a mandate for managing funds and spending based on agreed project activities. For a long time, the PIUs have been advocated by donors who feel government alone has no such capacity as to ensure efficient and effective use of development funds.

This approach allows for a coherent budget framework, spending, data management and reporting thus overcoming common problems faced through project-based approaches.

Nutrition and Food Security

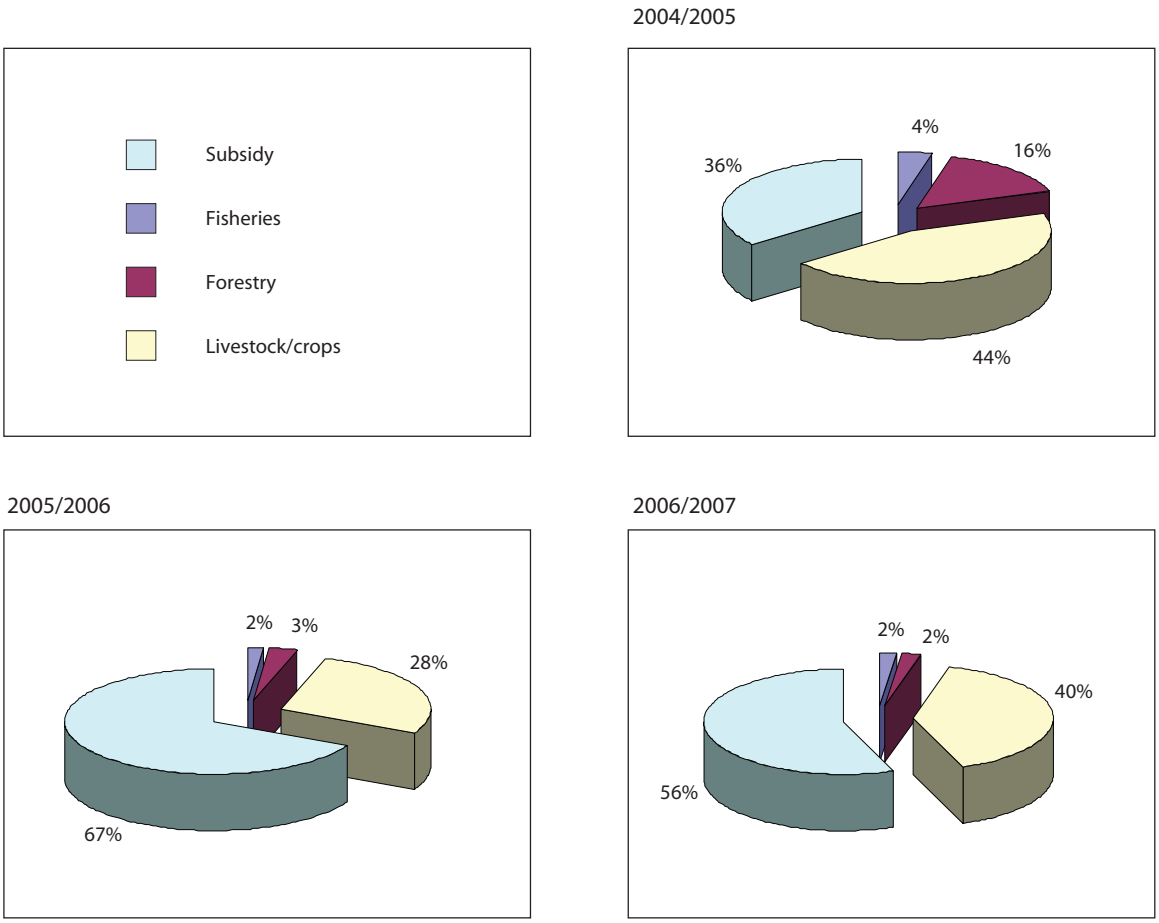
This program mainly comprises safety nets and other food and nutrition security initiatives and activities. Until the periods after 1994/95, most governments, including Malawi, were recuperating from the impacts of implementing structural adjustment programs which, among other things, did not favor subsidy programs. The dawn of multiparty democracy in Malawi around this period also saw the reintroduction of agricultural input support programs for smallholder farmers. During this period, the MoAFS implemented input subsidy programs, such as Starter Pack and Targeted Input Programmes under the Administration and Support Programme. These were however implemented at a relatively lower scale compared to recent trends. The evaluation of the subsidy program of 2006 reveals that in 1999/00 there were 2.88 million beneficiaries, followed by 1.5 million in 2000/01 and 1 million in 2001/02 which number rose again in 2002/03.

It was only after the introduction of the nutrition and food security program in 2003/04 that the input subsidy program spending was isolated. The analysis in Table 8 further shows that since 2003/04 spending in nutrition and food security program, mainly influenced by the input subsidy program, had grown. The government reintroduced a broader agricultural input subsidy program during the 2005/06 cropping season. In this program coupons were distributed to the "productive poor" households for use in purchasing highly subsidized fertilizer and seeds. Approximately 130,000 metric tons of fertilizer were distributed to more than 1.3 million farmers while the following year, approximately 1.5 million farmers received coupons for the purchase of 150,000 metric tons of fertilizer and 2 million farmers got coupons for free maize seed.

The impact of this policy decision coupled with good rains had been positive. Maize production was projected to have reached the highest level in the 2006/07 season following another good year in 2005/06 that was also supported by the input subsidy (ICL et al. 2007).

Below in figure 6 is a picture of the share of the nutrition and food security program as a total of the agriculture budget in relation to spending on fisheries, forestry and the rest of the crops and livestock for the 2004/05–2006/07 period.

Figure 6. Share of nutrition and food security budget from 2004 to 2007.



Sources: Computed from various budget documents of GoM 1998; 1998a, b, c; 2000; 2001; 2002; 2003; 2004a, b; 2007; 2007a, b

Land and Water Management

Analysis of program spending in the period reveals interesting results as far as land and water management activities are concerned. Despite the recurrent droughts and food crises experienced in Malawi, and calls for sustainable production technologies in irrigation and land management it is surprising to note that the program faces a dwindling share of resources. The spending growth rate of the program in the period after 2003 is -5.2% compared to a growth rate of about 72% before 2003 calculated in real terms.

Lack of soil and water conservation measures in farmers' fields increases soil erosion, which removes the fertile topsoil. The consequence has been the decline in soil productivity and low response to fertilizer application in crop yields and decline in total crop production. Most often, many well-intended technologies have been promoted without emphasis on complementary improved land and water management practices. This has resulted in the deterioration of soil conditions leading to reduced productive capacity of the land thus worsening food insecurity and negatively affecting the performance of the national economy. The World Bank estimated soil loss at the national level to be, on average, 20 tonnes per hectare per year. This leads to an annual yield loss of 4-11% for Malawians translating to a mean annual income loss of MK10-MK29/ha.

The Department of Irrigation in the Ministry of Irrigation and Water Development, 2006 reported that there were less than 90,000 ha of land under water management in the country at the time, representing just 20% of the total farmed area. Of this, only 54,000 ha are equipped for full or partial irrigation, approximately 10% of the estimated physical potential of 500,000 ha. Clearly, this shows how important it is to prioritize spending in these areas.

Research and Extension Services

The research and technology program is the only one with the least average spending compared to the other programs over the period in cash terms. The situation also looks good when one looks at the spending growth rates (an average growth rate of 29% against minus 6.7% before the 2003/04 period) but whether this is enough to conclude that the program got optimal resources remains doubtful. The average spending growth rate for the Agricultural Extension Programme (including spending on livestock and crops) has also grown in cash terms from 14.8% to 46%. The review of 2000 on public spending on agriculture revealed that spending on extension had fallen from about 3.7% of the total government budget in the early 1990s to around 2.6% in the late 1990s. Similarly, it revealed that research spending fell from 0.8% of the total government budget in the early 1990s to 0.5% in the late 1990s.

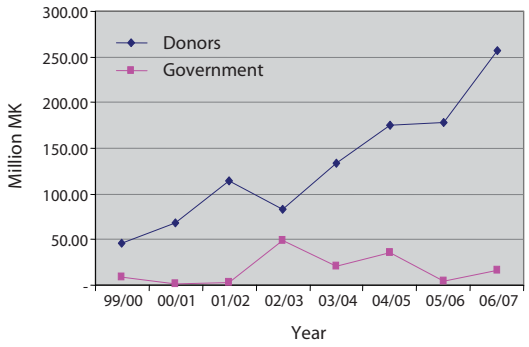
Chirwa et al. (2008) also report that there has also been declining funding for research and development in the agriculture sector of Malawi. He argues that most state institutions that developed capabilities in agricultural research and development have either been closed or remain underfunded and are being asked to commercialize.

Fisheries

Just like the crops and livestock functions, fisheries also has an administration and support services program, extension services, a fisheries and aquaculture development program, manpower development and institutional strengthening, research, and a technology generation and development program. Fisheries received the least resources of the three departments averaging 6% (in cash and real terms) for the period under review. By proportion the recurrent spending of fisheries is negligible and constantly keeps declining. The development budget for fisheries has been steady owing to the increasing support from donors (refer Figure 7a, b) in cash terms through projects like the following:

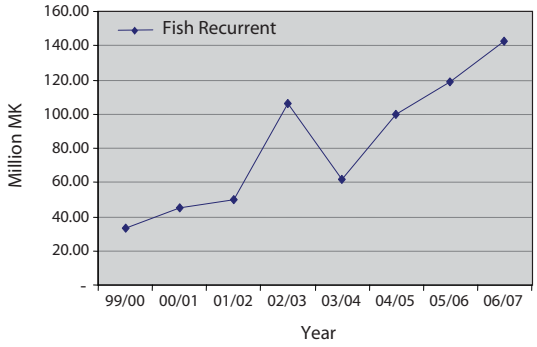
- Aquaculture Research and Technical Development of Malawian Indigenous Species (ARTDMIS)
- HIPC Support to Small-Scale Fish Farming in Malawi: A Rural Fisheries Income Generating Activity (FIGA)
- Lake Malawi Artisanal Fisheries Development Project
- Small-Scale Offshore Fishery Technology Development Project (SOFTDP)

Figure 7a. Fisheries development spending in cash.



Sources: Computed from various budget documents of GoM 1998; , 1998a, b,c; 2000; 2001; 2002; 2003; 2004a, b; 2007; 2007a, b.

Figure 7b. Fisheries recurrent spending in cash.

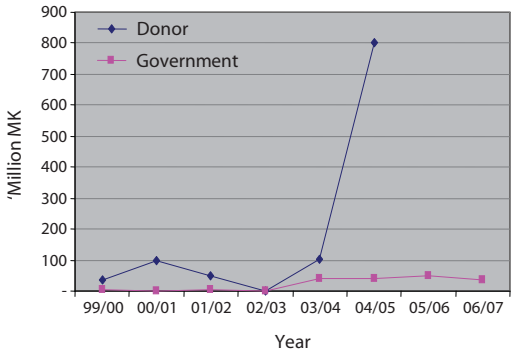


Sources: Computed from various budget documents of GoM 1998; 1998a, b,c; 2000; 2001; 2002; 2003; 2004a, b; 2007; 2007a, b.

Forestry Development

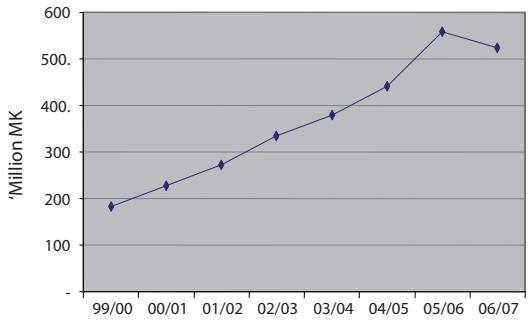
On the other hand, spending on forestry averages 14% (9% in real terms) of total spending on agriculture. Some of the programs under forestry include provision of extension services, planning and enforcement and finally research and development. Unlike the development budget, which is erratic, the recurrent one provides a consistent (Figure 8a, b below) flow but steadily declining resources in proportion to the total spending on agriculture.

Figure 8a. Forestry development spending in cash.



Sources: Computed from various budget documents of GoM 1998; 1998a, b, c; 2000; 2001; 2002; 2003; 2004a, b; 2007; 2007a, b.

Figure 8b. Forestry recurrent spending in cash.



Sources: Computed from various budget documents of GoM 1998; 1998a, b, c; 2000; 2001; 2002; 2003; 2004a, b; 2007; 2007a, b.

CHAPTER 4

SOURCES OF AGRICULTURAL SPENDING IN MALAWI

The following are the various ministries and departments which have a bearing as far as public spending on agriculture in Malawi is concerned:

a) Ministry of Agriculture and Food Security
b) Ministry of Irrigation and Water Development[4]
c) Department of Forestry
d) Department of Fisheries

The above ministries and departments discharge a diverse range of agriculture-related activities across the country at both central and local levels. The actual spending is manifested in all the 28 districts of the country through the Ministry of Local Government/District Assemblies; the eight agroecological zones of the country called ADDs through the MoAFS and the Ministry of Irrigation and Water Development (MoIWD). Other items of substantive spending are incurred at the central/headquarters level for these departments. Section under **Sources of Funding** below shows the aggregate spending by various sources over the past 5 years.

Sources of Funding

Agriculture-related spending in the ministries and departments outlined earlier are subdivided into two major areas as development and recurrent. Both these areas are either directly or indirectly supported by government and donors in general. The donor support to the recurrent budget is not easily traced because it comes into a pool (Ministry of Finance/consolidated fund) as budget support, while the donor support for the development budget is easily tracked and is commonly referred to as part 1 support. Table A1 of this report disaggregates donor versus government support into the development budget of agriculture,[5] fisheries and forestry subsections/departments.

Based on records of actual and projected spending maintained by the Ministry of Finance under the Debt and Aid Management Division, apart from government as a sponsor of agricultural spending there are also a number of donors/developing partners supporting the sector through budget support or otherwise as follows: European Union, USAID, World Bank, Government of Norway, DFID, JICA, ADB and UNFAO.

Government and Donor Contribution to Total Spending on Agriculture

Apart from looking at aggregate numbers in tracking public spending in agriculture, it is also imperative to look at the levels of contributions from major sources of funding, in this case the government and/or the donor community. The study therefore attempted to aggregate all items of

[4] All expenditures for irrigation activities were planned and executed under MoAFS for the period under review.

[5] "Agriculture," in this case, refers to expenditures directly related to activities in livestock and crops.

spending supported by the government (all items of recurrent spending plus government's contribution to the development budget) as compared to those under donor support. Illustrations are given in Table 9 below;

Table 9. Distribution of funding for agriculture.

	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07
% donor funds in total agriculture	41.2	38.5	20.1	25.5	27.8	18.8	12.2	23.0
% government funds in total agriculture	58.8	61.5	79.9	74.5	72.2	81.2	87.8	77.0
% donor funds in total development	84.1	99.4	93.5	85.1	88.3	75.2	87.7	82.6
% government funds in total development	15.9	0.6	6.5	14.9	11.7	24.8	12.4	17.4
% development of total agriculture	47.4	33.9	18.8	30.0	28.0	13.8	13.7	27.7
Total development real	1,277.9	778.0	403.0	907.7	809.9	1,321.6	1,824.5	3,781.9
Total recurrent real	1,331.2	1,228.0	1,468.7	2,121.1	1,761.6	3,975.8	11,229.7	9,815.4

Sources: Computed from various budget documents of GoM 1998; 1998a, b, c; 2000; 2001; 2002; 2003; 2004a, b; 2007; 2007a, b.

The analysis revealed that in the period under review government was responsible for at least 70% of total spending on agriculture leaving donors with less than 30% largely supporting the sector's development budget. Further analysis however reveals that between fiscal years 2003/04 and 2006/07, government spent, on average, 53.33% of its total spending in agriculture in supporting nutrition and food security activities (largely dominated by input subsidies and food imports).

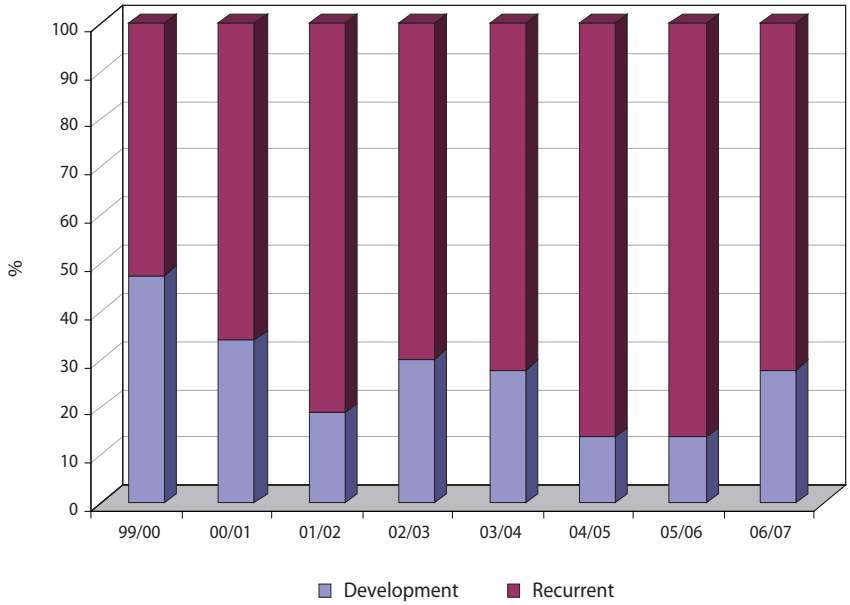
The downward trend in the share of donor contribution in the total budget for agriculture does not emanate from declining amounts of donor investments in the sector. Rather, it is reflective of the ever-increasing injections of government resources into the subsidy program.

On the other hand, comparing recurrent spending against development spending, the analysis shows that recurrent spending has hovered around 73% against 27% for development. Figure 9 relates the two in terms of their proportion to total spending on agriculture.

Development support to spending on agriculture has taken a downward trend, worsening in fiscal years 2004/05 and 2005/06 due to heavy government injections through the food importations as well as the subsidy program. Further analysis shows that, of the total development budget of the agriculture sector, donor contribution has averaged 86% during the past 8 years leaving government support to development budget at a meager average 14% and hitting record lows of 0.63% and 6% during financial years 2000 and 2001, respectively.

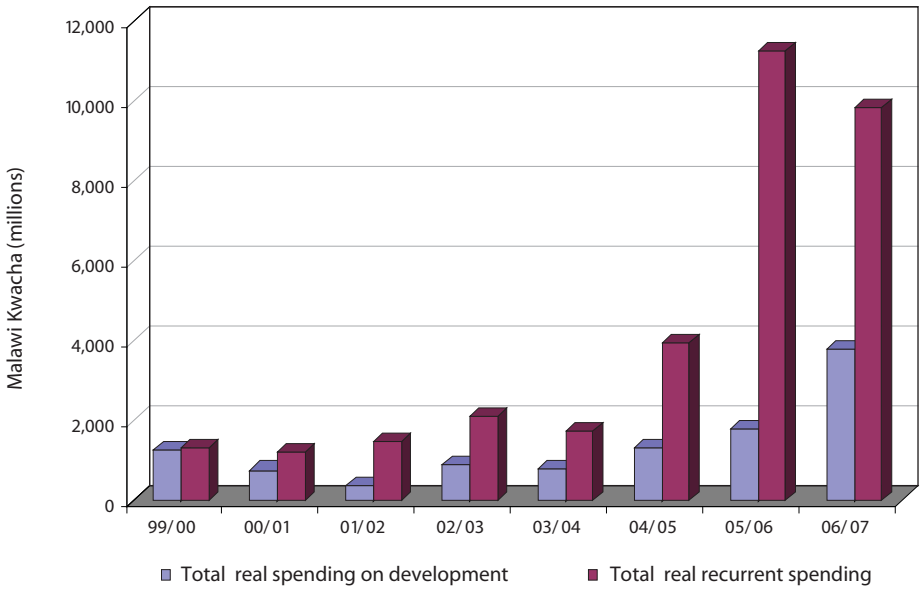
The outlook in real terms (Figure 10) however shows that both items of recurrent and development spending have an upward positive trend, meaning that, over time, both the development and recurrent parts of spending on agriculture have been improving.

Figure 9. Shares of development and recurrent spending.



Sources: Computed from various budget documents of GoM 1998; 1998a, b, c; 2000; 2001; 2002; 2003; 2004a, b; 2007; 2007a, b.

Figure 10. Real spending in agriculture.



Sources: Computed from various budget documents of GoM 1998; 1998a, b, c; 2000; 2001; 2002; 2003; 2004a, b; 2007; 2007a, b.

CHAPTER 5

SPATIAL DISTRIBUTION OF AGRICULTURAL SPENDING IN MALAWI

Mapping Public Spending in Agriculture

The most common graphic mechanisms used to track public spending in agriculture are graphs and tables. Although these are very useful to present comprehensive views of such spending, they cannot adequately communicate any spatial variation in agricultural spending. Even when including the names of different areas of a country, such as villages or districts, any variations will only be evident to those with a very intimate knowledge of the agricultural activities in the country being studied.

In order to represent variations in agricultural spending over time and space, a Geographic Information System (GIS) database must be established. Such a GIS database integrates the data that usually form the bases of tables and graphs, with geo-referenced data of the areas where agricultural spending is targeted. Such a GIS database also allows for the integration of data on spending with data on poverty, population, agricultural production and other relevant data sets. The real advantage of the establishment of a GIS database is that it allows for spatial analysis.

Spatial analysis is an approach to geography comprising three interrelated themes. The first is spatial arrangement, where the locational pattern of objects is under study and where these phenomena occur in terms of a geographical grid are important. The second theme is that of space-time processes, where the modification of spatial arrangements through the passage of time is relevant. Third, there is spatial forecasting where a prediction can be made of future spatial arrangements, possibly based on the passage of time.

In the context of monitoring pubic spending in agriculture in Malawi, these three themes of spatial analysis come to the fore. The location of such spending to activities in a particular area forms the basis for establishing its spatial arrangement. Such spending can be expressed at various spatial levels, provided that the routine reporting of public spending takes such preferred spatial levels into account. In the case of Malawi, the district is the spatial level at which agricultural spending is recorded for each financial year. However, the most commonly used spatial level for agricultural planning is the ADD and it is also prudent to use this level to aggregate annual public spending in agriculture.

The Choropleth mapping technique is the most suitable for expressing this spatial arrangement. Choropleth mapping involves the assigning of data to an administrative area that is unrelated to the data. In the case of Malawi, the ADD will be that administrative area or mapping unit. Choropleth mapping is a relatively easy technique that reveals average distributions over varying sizes of mapping units. A drawback of the technique is that it can wrongfully imply distributional uniformity, by masking local variations, especially in larger mapping units. It does, however, allow for generalization in interpretation which is useful when studying public spending.

The second theme in spatial analysis, that of space-time processes, can also benefit from the Choropleth mapping technique. By representing the spatial distribution of public spending over various financial years, changes in patterns of spending can be traced. Given sufficient data, factors

influencing changes in spending over time could form the basis for future predictions of public spending, the third theme in spatial analysis.

Agricultural Development Divisions (ADDs)

The ADDs are designated regions with similar agroecological characteristics. Malawi has eight ADDs, as follows: Karonga and Mzuzu in the northern region; Kasungu, Lilongwe and Salima in the central region and Machinga, Blantyre and Shire Valley in the southern region. Maize, pulses, cassava and sweet potatoes are produced in all the eight ADDs of the country but some crops require specific agroecologies (MoAFS 2008). For example, cotton and rice are largely produced in Karonga, Machinga, Salima and Shire Valley while tobacco is largely grown in Mzuzu, Lilongwe and Kasungu ADDs. Table 10 gives the total land area, number of extension workers and farm families by ADD.

Table 10. Statistics of ADDs.

ADD	Land area (%)	No. of extension workers (2006)	No. of farm families (2006)
Karonga	8.0	76	108,266
Mzuzu	20.0	223	300,355
Kasungu	17.0	214	497,910
Lilongwe	14.0	357	673,795
Salima	7.0	92	193,161
Blantyre	11.0	252	566,333
Shire Valley	7.0	86	205,705
Machinga	16.0	262	825,692
Total	100.0	1,562.0	3,371,217.0

Source: MoAFS 2007.

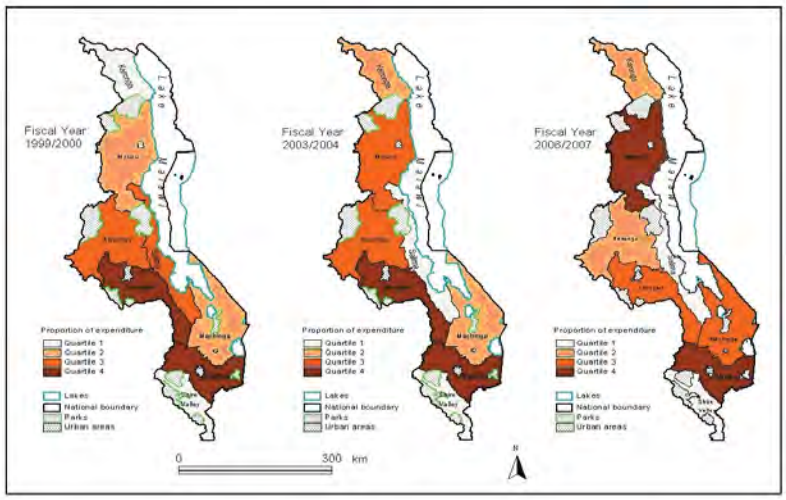
Analysis and Type of Data Used

The results of this analysis do not include spending from the development budget of the sector and spending from the Departments of Fisheries and Forestry. The failure to include development spending in this analysis was dictated by the fact that development projects are implemented by a single centrally coordinated PIU which does not usually capture spending data by geographical areas but does so by project components. As for the Departments of Fisheries and Forestry, the cost center 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 recurrent spending of district/research stations for years 1999/00, 2003/04 and 2006/07 constitutes about 63%, 53% and 12%, respectively, of the total recurrent spending on agriculture. Figures 11 and 12 show the mapping of this spending on agriculture compared across the ADDs/agroecological zones of the country between 1999/00 and 2006/07.

The analysis compares the changes in spending levels per agroecological zone over time. Figure 11 specifically shows how the change in spending after the Maputo Declaration compares across ADDs over time.

Figure 11. Pre- and post-Maputo Declaration on agricultural recurrent spending.



Spatial Proportion of Spending

The spatial analysis of spending across the ADDs shows interesting results in different benefits of ADDs from annual funding of recurrent spending compared across years. The results show that, with time and increasing aggregate spending for agriculture, Karonga, Mzuzu and Machinga ADDs saw a proportionate increase in the share of the district allocations, i.e., changing from quartile 1 to 2 or 3. The analysis also shows that 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 spending. The Kasungu ADD, on the other hand, experienced a declining share of spending, shifting from quartile 3 in 1999/00 and 2003/04 to quartile 2 in 2006/07.

Recurrent Spatial Growth of Spending in Agriculture

Figure 11 above analyzes the district recurrent spending growth in the pre- and post-Maputo Declaration of 2003/04. The analysis clearly shows that after the Maputo Declaration, the Government of Malawi reacted positively by increasing the spending in agriculture (not only on aggregate level) for the ADDs.

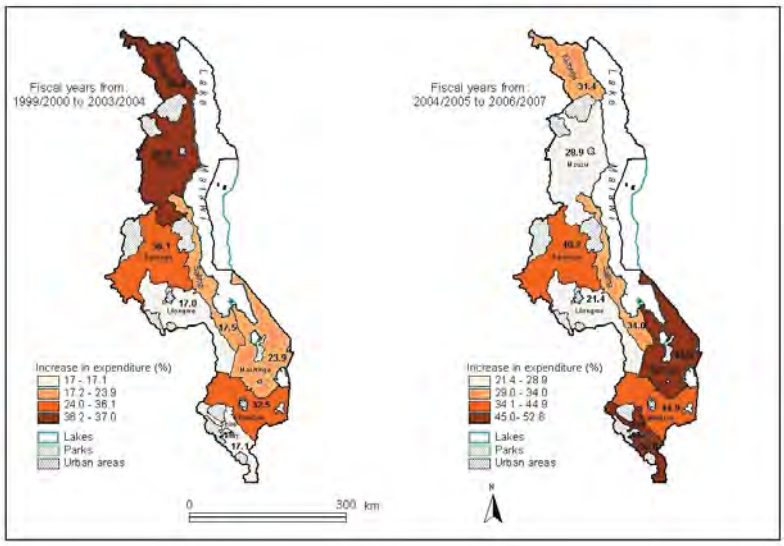
The spending growth rate rose from a minimum of 17% and a maximum of 37% for the period before the declaration to a minimum of 21% and a maximum growth rate of 53% over the period after the declaration. Overall, this tells us that, apart from the general aggregate rise in spending on agriculture as discussed in the preceding chapters, all the ADDs benefited from higher spending growth rates over time.

This finding validates the fact that the aggregate spending growth in the agriculture sector benefited more than one geographical zone.

Another interesting result from the analysis shown in the two figures is that it compares the one-time spending of one area with its growth rate over time. For example, Figure 11 shows the Shire Valley as an area falling in the lower quartile by proportion of spending in a particular year while Figure 12 reveals that over time the area has benefited from huge spending growth rates, i.e., of a maximum of 52.8%. Similarly, one is able to appreciate that as much as Mzuzu and Karonga show a positive trend in terms of proportion of spending in particular time periods, their growth rates over time have dwindled when compared to periods before and after the Maputo Declaration.

This analysis informs decision making by government depending on its priorities in terms of which crops and/or livestock strategies are undertaken in particular areas. For example, the government or the Ministry of Agriculture and Food Security should be able to seek answers as to why the spending growth rates for Mzuzu and Karonga are going down in an environment of rising aggregate spending in real terms.

Figure 12. Growth of spatial recurrent spending in agriculture.



CHAPTER 6

CONCLUSIONS AND RECOMMENDATIONS

One of the most striking findings of this study is that, in the past 2 years, Malawi has managed to allocate at least 10% of the national budget towards the agriculture sector. However, this has largely been influenced by the politically driven Inputs Subsidy Programme. The efficacy of such a scenario in relation to attracting the desired 6% sustainable growth rates of the agricultural output remains undemonstrated since the sector still remains susceptible to other shocks such as droughts, examples of which are the 2001/02 and 2004/05 financial years.

The spending on agriculture in general, in real terms, has increased over the period under review, both for recurrent and development components. This fact strengthens the position of the country with regard to the attainment of the 10% minimum allocation.

Until recently however, the study has shown that government was not committed to its planned spending. This was substantiated by the huge gap between the planned figures and the actual spending. The situation was worse for development programs where government support (in terms of share) has been minimal when compared to support from the donors. The government needs to revisit this situation to ensure leadership of the development agenda of agriculture.

The study also attempted to understand program spending under agriculture (livestock and crops), i.e., administration and support, land and water management, research and technology development, nutrition and food security and agricultural extension. The analysis of the Administration and Support Services Programme however revealed that there are some items of development spending accruing to one or many of the other programs that are grossly captured under it. With this revelation, the study recommends that an itemized assessment of the independent project implementation units be conducted to isolate relevant subprogram spending. This analysis will not only help in learning how much investment went into the programs but will also aid in influencing future investment policy decisions as well as responsible reporting and data management.

Specific attention also needs to be paid to the allocation of resources to the subsector. The study revealed that there is much focus in spending allocation in the livestock/crops subsector at the expense of fisheries and forestry. The study further revealed that most resources are being committed to recurrent activities and the food security program (including food imports and subsidies) rather than to development activities. A critical analysis shows that the magnitude of the rise in spending in real terms for some programs, e.g., research and development, is not enough to bring about the desired outputs. Similarly, the analysis revealed that the rate of growth of spending on the land and water management program dwindled after the declaration. The government must establish a deliberate policy to support its own development agenda, i.e., the MGDS- and CAADP-led ADP which prioritizes research, technology generation and dissemination, land and water management, agribusiness and market development, food security and risk mitigation, and institutional development and capacity building.

Spatial analysis of the spending on agriculture concludes that aggregate increases in spending also led to increases in spending by geographical regions in real terms. However, it is appreciated that the analysis brings value in terms of giving a visual appreciation of which particular areas are receiving more support than others. The government and other funding agencies stand to benefit from this in making future funding decisions according to the level of agricultural activity as well as to production potential of the area.

APPENDIX

Table A1. Sources of funding: Recurrent and development spending for agriculture (million MK).

	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07
Development budget (government)								
Agriculture	95		17	87	42	328	266	1,010
Forestry	3	1	3		41	40	50	37
Fisheries	9	2	2	49	20	35	4	16
Total	107	3	23	136	103	403	320	1,063
Development budget (donor)								
Agriculture	479	360	159	687	547	244	2,089	4,805
Forestry	38	100	50	1	101	802		
Fisheries	46	69	114	84	134	175	178	257
Total	563	529	323	772	781	1,221	2,267	5,062
Total	670	532	346	908	885	1,624	2,587	6,125
Recurrent spending								
Agriculture	482	568	937	1,679	1,482	4,345	15,247	15,230
Fisheries	33	45	50	106	62	100	119	142
Forestry	183	227	273	336	381	441	557	526
Total	697	840	1,259	2,121	1,924	4,886	15,923	15,897
Total development budget (real)	1,278	778	403	908	810	1,322	1,824	3,782
Total recurrent spending (real)	1,331	1,228	1,469	2,121	1,762	3,976	11,230	9,815
Exchange rate (MK:US$1.00)	44.09	59.55	72.20	76.69	97.44	108.95	118.45	136.01
Deflators	544.8	711.2	891.7	1,039.80	1,135.9	1,277.9	1,474.4	1,684.1

*2002/03 base year.

Sources: Computed from various budget documents of GoM 1998; 1998a, b, c; 2000; 2001; 2002; 2003; 2004a, b; 2007; 2007a, b.

Table A2. Categorization of subprograms into programs.

Administration and Support Services	Agricultural Extension Services	Nutrition and Food Security Services	Land and Water Management Services	Research and Technology Services
Minister's Office	Enforcement services	Safety nets	Land Resource Survey	Pesticide management
Management and Support	Crop management	Food and Nutrition	Land Resource Management	Soil Survey Research Station
Human Resource Management	Livestock management	Food security	Soil and water conservation	Adaptive research
Financial Management and Internal Audit	Extension management	Food nutrition	Irrigation development	Technology generation
Internal Audit	Extension methodology		Irrigation management	Technology management
Planning and Evaluation	Agriculture Communication Branch		Irrigation Technologies Development	Research Regulatory Services
HIV/AIDS Intervention	Agribusiness development			Agro-processing
Technical Coordination and Investment	Agriculture gender roles and support			Research management
Pro-poor Spending	Animal Health Regulatory			Land research conservation
Planning and Policy Review	Field crops			
Staff Development	Horticultural crops			
Agriculture Headquarters	Diagnostic and Investigation services			
Natural Resources College	One Village One Product			
Planning Management	Research extension and farmer linkage			
Program Development	Crop production			
Monitoring and Evaluation	Crop development			
Agriculture, Trade and Marketing	Animal production			
Information Technology	Farm mechanization			
Statistical Services	Veterinary services			
Auditing Services	Animal production			
Personnel Division	Extension Services			
Planning Division	Smallholder Coffee Authority			
Finance Division	Grain, legumes, fibers and oilseed			
Planning Services	Plant protection			
Technical Services	Cereals			
Nature Programme	Livestock and pastures			

Table A3. Recurrent spending for MoAFS establishments and districts.

	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07
Headquarters	179,473,123	224,244,511	432,519,243	840,971,879	691,849,415	3,366,975,7381	3,950,419,704	13,444,821,089
Shire Valley (ADD MU)*	18,009,707	14,438,198	17,844,251	18,569,425	21,039,358	30,909,945	35,029,741	41,695,684
Blantyre (ADD MU)	30,036,826	42,430,361	31,619,998	30,570,900	89,091,990	43,865,389	48,298,152	129,317,392
Machinga (ADD MU)	25,265,166	52,096,017	21,757,465	49,624,549	29,445,796	36,723,773	43,457,677	93,189,091
Salima (ADD MU)	27,849,980	18,712,630	32,423,437	25,693,089	31,759,754	35,560,975	36,979,737	44,621,358
Lilongwe (ADD MU)	30,069,167	45,317,970	72,889,933	52,669,787	43,196,215	39,923,741	43,870,304	100,417,698
Kasungu (ADD MU)	29,749,215	26,461,758	26,215,921	27,410,812	74,130,649	38,921,239	40,465,095	79,428,471
Mzuzu (ADD MU)	18,729,349	20,048,436	28,670,365	28,074,661	41,208,828	59,410,824	42,910,784	95,993,595
Karonga (ADD MU)	18,999,991	17,015,519	13,639,014	20,103,861	22,285,660	37,116,238	35,695,122	84,820,030
Chitedze research station	26,038,154	7,267,978	7,470,724	10,094,692	5,299,763	70,436,402	68,326,814	88,675,284
Bvumbwe research station	4,856,322	9,202,968	13,511,108	17,442,603	15,148,586	36,102,092	55,753,847	60,842,040
Makoka research station	4,723,091	3,113,824	6,477,815	9,197,090	12,709,278	27,776,368	33,689,556	32,213,528
Lunyangwa research station	3,456,956	3,980,187	7,133,655	11,013,238	10,982,305	60,046,176	51,814,342	56,887,684
Lifuwu research station	2,930,454	96,806	2,301,442	3,746,354	5,233,898	19,778,149	34,103,607	46,757,340
Baka research station	2,081,066	3,725,982	1,264,785	2,097,941	2,513,849	21,492,576	22,509,847	19,845,880
Chikwawa	1,570,515	9,531,453	924,159	32,167,065	19,282,651	9,776,980	30,261,548	32,280,840
Nsanje	1,808,778	4,342,857	3,366,926	27,785,312	9,525,643	23,479,899	23,106,387	25,425,036
Blantyre	1,386,086	2,914,894	1,996,108	9,685,343	3,699,524	21,286,696	25,592,488	12,420,204
Mwanza	1,600,533	1,135,452	1,430,095	11,700,069	5,206,900	6,870,64	10,319,268	16,296,864
Thyolo	2,739,534	2,120,706	5,104,459	9,801,753	3,992,088	13,789,018	19,376,532	18,233,400
Mulanje	2,410,231	1,927,927	1,676,766	11,064,935	3,777,284	6,742,367	17,791,308	14,413,704
Phalombe	3,120,421	2,433,098	2,696,694	10,081,511	5,363,253	8,655,847	17,719,428	9,781,932
Chiradzulu	-	-	920,408	9,210,914	4,056,570	6,475,729	16,302,016	10,033,152
Mangochi	1,270,946	1,098,319	677,910	17,568,206	16,216,586	12,992,731	33,863,356	28,489,916
Machinga	1,080,000	9,531,452	3,675,637	18,257,978	10,099,384	3,576,864	15,130,008	21,085,296
Zomba	1,187,200	4,342,858	4,084,065	25,473,974	9,830,946	1,960,937	24,650,940	28,566,648
Balaka	952,000	2,743,239	3,251,304	14,406,233	11,064,827	11,322,204	22,601,333	19,189,428
Nkhotakota	1,139,500	1,135,452	4,068,983	18,755,631	17,326,374	19,936,132	19,060,932	23,694,948

Table A3. Recurrent spending for MoAFS establishments and districts. (continued)

	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07
Salima	2,145,213	2,120,705	5,639,700	24,158,787	14,088,518	11,079,088	19,427,988	13,235,764
Lilongwe	2,622,435	1,932,716	26,999,805	34,049,316	37,944,133	50,944,058	70,034,392	29,386,784
Dedza	1,006,333	2,433,099	7,716,479	22,037,360	13,850,785	38,601,657	40,623,516	50,074,232
Ntcheu	1,336,743	738,255	14,534,900	13,860,535	23,538,550	3,018,054	25,850,472	45,369,468
Kasungu	1,132,832	2,179,281	11,808,377	60,928,161	8,815,335	5,044,134	16,547,472	15,755,040
Dowa	-	2,388,162	16,983,489	37,595,714	7,144,996	11,497,420	18,090,586	32,431,164
Ntchisi	1,683,846	1,351,413	9,558,137	16,138,474	7,530,590	11,095,788	12,705,372	15,727,776
Mchinji	1,579,996	3,154,175	12,049,554	4,442,276	19,484,702	18,530,713	23,618,752	23,862,276
Nkhata-Bay	-	774,696	17,077,256	11,962,194	15,515,780	16,708,944	20,427,948	25,730,772
Rumphi	1,166,829	1,858,892	4,112,214	12,784,610	15,075,007	16,392,051	22,840,236	29,105,800
Mzimba	-	6,785,181	25,011,524	32,347,009	27,366,641	34,485,095	69,428,232	68,184,060
Karonga	1,087,701	3,449,716	18,618,006	25,138,066	32,370,076	24,970,220	28,612,164	37,036,584
Chitipa	1,369,374	7,370,775	16,961,374	20,060,183	25,367,602	18,102,624	22,746,792	33,814,404
Neno	1,855,210	-	-	-	18,476,594	11,626,568	10,526,916	6,362,292
Likoma	-	-	-	-	-	1,465,155	1,220,172	1,571,412
Other research stations	14,066,057	-	-	-	-	-	8,403,200	18,204,098
Other livestock farms	8,303,439	-	-	-	-	-	-	-
Total	481,880,319	567,947,918	936,683,485	1,678,742,490	1,481,906,683	4,345,467,243	15,247,123,399	15,229,618,972

*ADD MU = Agricultural Development Division Management Unit.

Table A4. District population projections (1999-2007).

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007
Malawi	10,152,753	10,475,257	10,816,294	11,174,648	11,548,841	11,937,934	12,341,170	12,757,883	13,187,632
Northern region	1,253,107	1,284,343	1,317,575	1,352,686	1,389,475	1,427,807	1,467,575	1,508,659	1,550,966
Chitipa	129,984	134,124	138,448	142,983	147,730	152,691	157,872	163,271	168,880
Karonga	199,287	205,098	211,049	217,185	223,507	230,026	236,748	243,666	250,775
Nkhata bay	167,538	171,565	175,664	179,789	183,885	187,906	191,807	195,545	199,083
Rumphi	130,440	133,385	136,396	139,518	142,738	146,059	149,486	153,008	156,616
Mzimba	524,884	532,572	541,523	551,556	562,541	574,384	587,012	600,377	614,453
Likoma	8,231	8,504	8,804	9,130	9,482	9,856	10,251	10,664	11,094
Mzuzu city	92,743	99,095	105,691	112,525	119,592	126,885	134,399	142,128	150,065
Central region	4,172,016	4,321,405	4,478,401	4,642,818	4,814,321	4,992,753	5,177,965	5,369,810	5,568,238
Kasungu	495,375	513,562	531,914	550,568	569,581	589,019	608,917	629,278	650,103
Nkhotakota	235,559	243,215	250,939	258,827	266,909	275,213	283,761	292,556	301,604
Ntchisi	173,215	179,919	186,703	193,625	200,712	207,997	215,501	223,223	231,165
Dowa	415,526	424,609	434,693	445,662	457,426	469,924	483,110	496,954	511,448
Salima	257,185	267,167	277,277	287,576	298,099	308,882	319,947	331,308	342,979
Lilongwe rural	923,387	952,415	983,550	1,016,608	1,051,430	1,087,917	1,125,998	1,165,636	1,206,842
Lilongwe city	467,248	498,185	530,248	563,404	597,619	632,867	669,114	706,322	744,436
Mchinji	332,008	343,414	355,443	368,090	381,335	395,171	409,590	424,588	440,162
Dedza	495,405	510,530	526,874	544,334	562,823	582,289	602,696	624,028	646,292
Ntcheu	377,108	388,389	400,760	414,124	428,387	443,474	459,331	475,917	493,207
Southern region	4,727,630	4,869,509	5,020,318	5,179,144	5,345,045	5,517,374	5,695,630	5,879,414	6,068,428
Mangochi	619,479	635,375	652,636	671,102	690,644	711,179	732,653	755,039	778,338
Machinga	375,186	383,636	392,216	400,807	409,298	417,594	425,609	433,264	440,492
Zomba rural	488,012	499,935	513,052	527,209	542,270	558,132	574,720	591,991	609,914
Zomba municipality	70,134	74,915	79,877	85,016	90,325	95,797	101,423	107,195	113,106
Chiradzulu	239,299	245,129	251,570	258,553	266,011	273,893	282,158	290,780	299,738

Table A4. District population projections (1999-2007). (continued)

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007
Blantyre rural	309,917	316,498	323,832	331,818	340,371	349,427	358,940	368,879	379,220
Blantyre city	525,799	554,578	584,277	614,849	646,235	678,381	711,233	744,734	778,827
Mwanza	140,290	144,217	148,455	152,972	157,740	162,739	167,956	173,384	179,019
Thyolo	465,553	478,494	492,495	507,426	523,162	539,610	556,700	574,384	592,630
Mulanje	436,175	448,440	461,732	475,933	490,920	506,598	522,893	539,753	557,138
Phalombe	236,829	244,472	252,651	261,329	270,467	280,043	290,042	300,451	311,250
Chikwawa	366,084	377,521	389,066	400,811	412,800	425,080	437,678	450,609	463,888
Nsanje	198,243	203,111	208,018	213,009	218,079	223,278	228,656	234,218	239,972
Balaka	256,630	263,188	270,441	278,310	286,723	295,623	304,969	314,733	324,896

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The Regional Strategic Analysis and Knowledge Support System (ReSAKSS) is an Africa-wide network that provides analysis, data, and tools to promote evidence-based decision making, improve awareness of the role of agriculture for development in Africa, fill knowledge gaps, promote dialogue and facilitate the benchmarking and review processes associated with the AU/NEPAD's Comprehensive Africa Agriculture Development Programme (CAADP) and other regional agricultural development initiatives in Africa.

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Regional Strategic Analysis and Knowledge Support System

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